

**RESPONSE TO THE DRAFT TIER 1 REMEDIAL INVESTIGATION REPORT COMMENTS
STAR LAKE CANAL SUPERFUND SITE, JEFFERSON COUNTY, TEXAS
DECEMBER 2007**

Item No.	Reference	Comment made by	Comment	Response
GENERAL COMMENTS				
1	General	Jessica White, NOAA	Several responses appear to deflect from the comments based upon the defense of an approved Tier 1 Work Plan. This is troubling because the RI is proceeding under a tiered process. By nature the tiered process is meant to be flexible and iterative. As information becomes available the process adapts as necessary with each phase or tier building upon the last. The process begins with much uncertainty – data is collected and evaluated to reduce this uncertainty.	We agree that a tiered assessment should be flexible and iterative in nature. When the tiered approach is applied to a risk assessment, there may be a clarification of the total data set available to date and thus an interactive evaluation of the risk assessment should be conducted during each tier. As the assessment moves from tier to tier, pathways of investigation and evaluation should narrow and focus future data collection efforts to fill data gaps based on the information gathered. The comment responses contained herein have been revised, and the draft Tier 1 report will be revised, to reflect our understanding of the tiered risk assessment approach.
2	General	Jessica White, NOAA	Work Plans are skeletal in comparison to the RI – they do not provide the detail and context of a full report. Reliance upon the Work Plan as the means to resolve complex technical issues limits the ability of the agencies to respond to new information. When a comment is presented that poses a thoughtful, logical issue with a solid technical basis it should be addressed in a direct manner. Specifically, item numbers 5, 7, 10, 11, 14, 20, 34, 36, 41, 48, 49, 77, 78, and 80 had an unsatisfactory response based upon the defense of an approved Work Plan. The issues identified in these comments should be addressed before moving forward with the RI.	Please see attached response to Comment No. 2. In addition, responses to the specific previous comments are provided in the responses herein.
3	General	Kenneth Shewmake, USEPA Ecological Risk Assessor	Comment 10, 20, and 36: In my comment letter on the draft RI report on 4-7-06 the following comment was stated. <i>When establishing a hierarchy for the selection of ecological benchmarks, Texas chronic WQS should be considered before NAWQC.</i> In addition the work plan did not include a full list of benchmarks that will be used during the RI. The discussion of benchmarks was confused by references to ARARs that may or may not be used as benchmarks. The primary source of ecological benchmarks for this site should be TCEQ. This was also addressed in my comments on the draft work plan. The work plan does not clearly state or list the specific benchmarks that will be used so the argument that alternative benchmarks have been approved is not appropriate.	The Tier 1 RI Report will be revised to include the use of the Texas Surface Water Quality Standards (TSWQS) as the primary source of ecological benchmarks and the National Ambient Water Quality Criteria (NAWQC) as supplement benchmarks where there are no TSWQS or where the NAWQC is more stringent. Tables will cite the benchmarks used and the source(s). In subsequent tiers, additional benchmarks might be utilized to fill some of the data gaps. Those would be discussed with EPA and TCEQ (and other stakeholders) prior to the inclusion and would not be used in place of the current benchmarks.
4	General	Kenneth Shewmake, USEPA Ecological Risk Assessor	Comments 4, 7, 9, 28, and 72 are all related to showing how the data will be analyzed, explaining the DQO process, and explaining what will be accomplished in tier two of the RI. It would be best to discuss these issues in a scoping meeting prior to submission of the Tier Two RI work plan or report.	Please see attached response to Comment No. 4.
5	General	Kenneth Shewmake, USEPA Ecological Risk Assessor	Comment 77 and 78: The approved work plan states that criteria used for development of the initial list of COPCs are from the EPA RAGs and the TCEQ risk reduction program (page 5-2 of WP). These guidance documents describe conditions that must apply in order to use these exclusions. For example the detected in less than 5% of samples rule can only be used if more than 20 samples are collected. All of the other conditions listed in RAGS apply because the work plan cited these documents. The revised tier one RI report needs to document the criteria used for elimination of COPCs so that the reviewer can confirm that the use of that criteria was appropriate.	The criteria used in the Tier 1 RI for elimination of human health COPCs and ecological COPECs are outlined in Section 7.1 and Section 8.2.3 of the Draft Tier 1 RI Report, respectively. As requested, tables will be revised to indicate when criteria for specific constituents were met and resulted in elimination of a constituent as a COPC or COPEC. In addition, based on an evaluation of the data collected during the Tier 1 RI, no constituents are being eliminated due to detection in less than 5 percent of samples.
6	General	Kenneth Shewmake, USEPA Ecological Risk Assessor	Comment 80: The elimination of essential nutrients that are only toxic at high concentrations was not listed in the WP but it is discussed in RAGS (section 5.9.4). It is to the PRPs benefit to use this exclusion. Because it appears that this exclusion was used in the draft tier one RI report, its use should be documented.	The elimination of essential nutrients that are only toxic at high concentrations will be listed in the Draft Tier 1 RI report to account for any constituent that is being eliminated due to this exclusion listed in the EPA RAGS.

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7	General	Larry Champagne TCEQ Technical Support Section Remediation Division	Several responses appear to deflect from the comments based upon the defense of an approved Tier 1 Work Plan. This is troubling because the Remedial Investigation (RI) is proceeding under a tiered process. By nature, the tiered process is meant to be flexible and iterative. As information becomes available, the process adapts as necessary, with each tier building upon the last. The process begins with much uncertainty and data is collected & evaluated to reduce this uncertainty. Work Plans are skeletal in comparison to the Tier 1 RI Report, since they do not provide the detail and context of a full report. Reliance upon the Work Plan as the means to resolve complex technical issues limits the ability of the agencies to respond to new information. When a comment is presented that poses a thoughtful, logical issue with a solid technical basis, it should be addressed in a direct manner. Specifically, item numbers 5, 7, 10, 11, 14, 20, 34, 36, 41, 48, 49, 77, 78, 80 have an unsatisfactory response based upon the defense of an approved Work Plan. The issues identified in these comments should be addressed before moving forward with the Tier 2 RI.	See attached responses to Comments No. 1 and 2.
8	General	Larry Champagne TCEQ Technical Support Section Remediation Division	Everyone involved in the RI at the Star Lake Canal site would prefer the remedial process be as efficient and timely as possible. However, going through a "response to comments" process prior to revising the associated document is only an efficient and timely exercise if the responses contain enough information to assure the reviewer that the revisions will adequately address the issues of concern. As presented below in the Specific Comments, several of the responses were inadequate. Multiple comment exchanges reiterating the exact same comments from both the State of Texas and the federal and state Trustees slows the process down and does nothing to move the remedial process forward. Adequately addressing these comments when they are first submitted will help us continue to make progress in this remedial process.	We agree with the objective of making the RI process more timely and efficient. To facilitate this objective we are providing herein more detailed responses to comments and, in addition, are agreeing to numerous requested modifications to the draft Tier 1 RI report.
9	General	Larry Champagne TCEQ Technical Support Section Remediation Division	Several responses defer issues to the Tier 2 RI. It is important that the Tier 1 RI firmly establishes that its goals and objectives have been achieved or acknowledges where those objectives are to be incorporated into the Tier 2 RI. Further, the Tier 2 will likely expand the Tier 1 results by developing additional lines of evidence to be used in a weight-of-evidence approach to characterize ecological risk. This can include a chemistry line-of-evidence for community level exposures to sediment and surface water. The evaluations performed in the Tier 1 RI do not simply "complete the Tier 1 RI", but lay the foundation for one line-of-evidence that may or may not be refined in the Tier 2 RI. It is very important that the methodology of the Tier 1 RI be sound enough to be included in any weight-of-evidence approach used to characterize risk to ecological receptors in the Tier 2 RI.	See attached response to Comments 2 and 4.
10	General	Larry Champagne TCEQ Technical Support Section Remediation Division	Apparently, there was some confusion over the release of the prior round of combined Trustee/TCEQ Ecorisk Assessor comments that may have resulted in the duplication of several comments. For purposes of this current review, we will be responding to the original comments submitted in my memo dated May 31, 2007 and we will also identify the corresponding comments listed as "Combined Trustee Comments" in the response spread sheet. In the future, unless otherwise specified, it will be the memo from the TCEQ ecological risk assessor that will reflect the official review comments from both the Natural Resource Trustees and those of the risk assessor.	No response necessary.
11	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 10: As specified in the Item 22 comment by EPA and as agreed to in the associated response, TCEQ's promulgated surface water quality standards are clearly ARARs. It is important that the protection of aquatic life that the criteria listed in the Texas Surface Water Quality Standards (TSWQS, 30 TAC §307) be used as the primary source as these are state law. The National Ambient Water Quality Criteria (NAWQC) can then be used to supplement the TSWQS where there are no values for particular COPECs or where the NAWQC are more stringent. This is a non-negotiable item.	See the response to Comment No. 3.

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12	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 11 (corresponding Item 5): The response is unclear on how cumulative effects will be evaluated. The potential for cumulative effects will need to be adequately considered in order to characterize risk to ecological receptors. Polycyclic Aromatic Hydrocarbons (PAHs) are known to have a narcotic cumulative effect; this exposure scenario to aquatic life needs to be evaluated prior to the SLERA proposing that individual PAHs can be removed from further evaluation for water exposures. PAH exposure to bird and mammal receptors will need to be evaluated using a toxicity reference value representative of PAHs (e.g., totals or a low and high molecular weight grouping) or be subject to a Hazard Index evaluation. Also, Arochlor analytical data can be used to calculate a Total PCB concentration, so negating this issue by stating that the approved analytical program calls for Arochlor analysis is irrelevant to the issue of evaluating exposure to Total PCBs.	The SLERA will be revised to reflect the evaluation of ecological risk associated with total PAH concentrations rather than individual PAH concentrations. The potential for cumulative PAH effects will be adequately considered in order to characterize risk to ecological receptors. In addition, we will evaluate whether Total PCB concentrations can be calculated with the use of individual Arochlor analytical data. TRV values will be established for Total PAHs and possibly for Total PCBs and will be used in the determination of Hazard Quotients (HQs).
13	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 14 (corresponding Item 7): We are still looking into the presence of dioxin in the site vicinity. It is known that Star Lake Canal/Jefferson Canal has received industrial waste water discharges from several local chemical manufacturing facilities for a number of years. It is also known that 2, 4, 5-T was found at some of these chemical companies (TNRCC, 1999) and that 2, 3, 7, 8-TCDD is a byproduct of the manufacture of 2, 4, 5-T and thus would be present in any 2, 4, 5-T product.	See attached response to Comment No. 13.
14	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 36: The response does not address the issue that water benchmarks for PAHs used in the SLERA are inconsistent with National Recommended Water Quality Criteria or TCEQ ecological benchmarks; although text states that these are the sources for water benchmarks. This includes failing to use State of Texas water quality standards (e.g., phenanthrene).	See response to Comment No. 3. The tables will be revised to reflect TCEQ benchmarks for PAHs and the Draft Tier 1 RI Report will be revised to reflect all those changes. As indicated previously, TCEQ benchmarks will be used preferentially and will be used in the Tier 2 RI.
15	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 38: The response to our comment regarding the evaluation of threatened/endangered species is inadequate. The response needs to provide more details as to how the RI Report will be revised to address all of the issues presented in the comment.	The 4th bullet will be revised so that it reads "the ROCs must reflect state of federally listed T&E species if their occurrence was confirmed at the site or potential habitat for the species exists on the site". ENTRIX has included the White-faced Ibis (see detail in Comment No. 17) and is currently building the model for the Brown Pelican. In addition Section 7 consultation letters will be evaluated in more detail and determine whether adequate habitat exists for other noted state or federally threatened or endangered species within this county. If habitat exists, models will be generated to estimate potential risk to those species.
16	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 40: The response to our comment regarding the muskrat is inadequate. The response needs to provide more specifics as to how the information for the muskrat will be "modified accordingly." Will the revised document correctly characterize the muskrat diet according to the comments provided? How will the soil and sediment data be used when determining the total dose for the muskrat?	The attached table (Table 6-1) has been provided that details the exposure factors utilized for the Muskrat and the citations for each value. In addition, the current risk models take into account sediment ingestion, water ingestion, soil ingestion, and ingestion of vegetation as a food source and adequately characterize each. To provide clarity, all input variables and equations for each model will be provided as an appendices in the Tier 1 RI report and subsequent phases of the investigation.
17	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 40: The response to our comment regarding the white-faced ibis is inadequate. Which surrogate species will be used for the listed white-faced ibis? Will conservative assumptions (e.g., NOAELs) be used for this and other surrogate species in the Tier 2 evaluation?	The attached Table (Table 6-1) provides detailed information regarding the exposure factors utilized for the White-faced Ibis. Some information was calculated based on the allometric equations obtained from the EPA's Exposure Factors Handbook. Other information was obtained through various citations (See the attached table). In addition, the Great Blue Heron was used as a surrogate (i.e., ingestion rates); however, the values were adjusted for body weight. This is considered sufficient so that the White-faced Ibis is adequately characterized. In addition, all input variables, equations, and a revised exposure factors table will be provided in the Tier 1.

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18	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 41: The response to our comment regarding the addition of terrestrial receptors is inadequate. Please revise the receptor list according to the comment provided. Although the initial receptor list was approved in the Tier RI Work Plan, new information regarding extent of terrestrial contamination combined with a site visit confirming habitat availability should be used to modify the original receptor list accordingly.	In addition to the use of a raccoon as the approved and evaluated ROC, a small mammal (e.g., deer mouse), a terrestrial bird (e.g., robin and/or red-tailed hawk), the Spotted Sandpiper, and a reptile will be added. Also, an amphibian receptor will be added to the list of ROCs. Models will be generated and each species will be evaluated and added to the Draft Tier 1 RI Report.
19	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 48: The response is inadequate to address the several aspects of the comment. Evaluation of benthic community exposure to PAH mixtures using USEPA guidance should be performed according to USEPA, 2003, the most recent guidance on the topic. Recall, the SLERA cited and used a 2000 USEPA document, which is a draft, out of date and no longer available to the public. The SLERA needs to be revised to conform to guidance provided in USEPA, 2003.	The SLERA will be revised to reflect the final USEPA Guidance (2003) regarding the evaluation of benthic community exposure to PAH mixtures. Essentially, the latest guidance generally represents previous draft guidance in most technical aspects of PAH mixtures and their combined effects on benthic organisms.
20	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 48: Clarify the inconsistency between Table 3 - List of Constituents Analyzed in the Tier 1 RI, which identifies 34 PAHs and the SLERA sediment data tables which only provides results for 16 PAHs. Was the analytical program performed as approved?	Additional PAHs that included benzo(e)pyrene, perylene, and the C1-, C-2, C3-, and C-4 PAHs were erroneously included in Table 3 of the Draft Tier 1 RI Report. The samples collected during the Tier 1 RI were analyzed in accordance with the QAPP, Appendix A of the approved Tier 1 RI Work Plan, which included 16 PAHs. Table 3 of the Draft Tier 1 RI Report will be revised to reflect the correct COC list from the QAPP, Appendix A of the approved Tier 1 RI Work Plan.
21	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 48: SLERA text incorrectly states that the raw summed toxicity units were corrected by multiplying by 2.75 in order to estimate toxicity associated with 34 PAHs, <i>essentially ensuring the corrected sum toxic units will fall within the 95% confidence limits of those measured using 34 PAHs</i> . According to USEPA, 2003, use of a 2.75 correction factor does not ensure the corrected sum toxic units will fall within the 95% confidence limits of those measured using 34 PAHs; rather it would fall within the 50th percentile, which would not provide a necessary level of confidence for either a screening level or baseline assessment. The SLERA needs to be revised to be consistent with the methodology selected. An unexplained reference to similar assessments and professional judgment is insufficient to negate USEPA guidance. As the chemistry line of evidence will most likely be one line of evidence in a weight of evidence approach to evaluating the benthic community, it is imperative that the SLERA adequately implement USEPA guidance cited as the basis for particular methodology.	See response to Comment No. 3 . The tables will be revised to reflect TCEQ benchmarks for PAHs and revise the Draft Tier 1 RI Report to reflect all the changes. As stated previously, TCEQ benchmarks will be used preferentially and will be used in the Tier 2 RI.
22	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 48: The response also rejects the request to evaluate the benthic community using the TCEQ's Total PAH benchmark approach (i.e., comparison of site data to first effects level and the mid-point level between the first and second effects levels (TCEQ, 2001 and update of 2006)). Despite the position taken in the response to comments, PAH data must be presented as Total PAHs within the sediment data Tables 6A to 6D.	The SLERA will be revised to reflect the evaluation of receptors with the use of TCEQ's Total PAH benchmark approach. Tables 6A and 6D in the Draft Tier 1 RI Report will be revised to reflect this change.
23	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 49: See comment regarding evaluation of exposure to Total PCBs. <i>Hazard Quotients (Evaluation of Aroclor): It is common practice for risk from exposure to polychlorinated biphenyls (PCBs) to be evaluated based on a Total PCB concentration to consider the similar toxic mechanism of the various Aroclors. It is unclear why the SLERA developed HQs for individual Aroclors. In addition, Aroclor analysis is a poor analytical method to evaluate weathered PCBs. With the confirmation of their presence in Tier 1, Tier 2 sampling should consider this issue.</i>	As discussed in the response to Item No. 12, we will evaluate whether the SLERA should be revised to show calculation of HQs based on Total Aroclors rather than individual Aroclors. Given that only individual Aroclor analytical data is available, the assumption that Total Aroclors accurately reflect Total PCBs may not be appropriate. In addition, we will evaluate whether the Tier 2 RI Work Plan should address the analysis of weathered PCBs.

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24	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 72 (corresponding Item 71): The response to our comment regarding Molasses Bayou is inadequate as it references to Item No. 57, which simply states that a detailed scope of work will be provided in the Tier 2. To ensure a thorough scope of work, and to minimize comment exchange on the Tier 2 document (and this Tier 1 document), more specifics could be provided at this point in the process. Enough information should be available already to answer our elemental question regarding whether further sampling of Molasses Bayou will occur.	Constituent concentrations were detected above the limiting human health criteria (LHHC) in sediment samples collected in the watercourse of Molasses Bayou at locations MB-10, MB-14, MB-18, and MB-21. However, no constituents were detected in sediment samples above the LHHC in samples collected outside of the watercourse at adjacent locations MB-11, MB-12, MB-15, MB-16, MB-17, MB-19, MB-20, MB-22, and MB-23. Therefore, the pathway for constituents to migrate through Molasses Bayou appears to be partially limited to the watercourse of the bayou. Additional sampling of Molasses Bayou will be completed in the Tier 2 RI to further determine the horizontal and vertical extent of impact in this portion of Molasses Bayou including within the watercourse and adjacent to the watercourse.
25	Specific	Larry Champagne TCEQ Technical Support Section Remediation Division	Item No. 75: Please verify the understanding regarding the surrogate text being present, as it appears to be absent. See Appendix H, Pages H-20 to H-24.	This information including verification will be provided in the Draft Tier 1 RI Report. The TRV section will be reviewed and inconsistencies within the text will be reconciled accordingly. Any missing information will be added to the appendices.
26	General	Sarah Schreier TCEQ Technical Support Section Remediation Division	Data from the Huntsman facility suggests that groundwater at the site is potentially usable for drinking water purposes. Therefore, TCEQ does not concur that a groundwater exposure pathway is not applicable. The original comment is reiterated here. Groundwater exposure pathways and potential groundwater impact from the Star Lake Canal Site must be evaluated in future iterations of the remedial investigation.	A review of groundwater yield (slug test) data collected during the Huntsman Site Wide APAR from monitor wells at the Huntsman facility suggests that groundwater at the site is potentially usable for drinking water purposes. In addition, the potentiometric data collected during the Tier 1 RI near the Star Lake Canal dam indicates that groundwater to surface water discharge may be possible at times. Therefore, groundwater exposure pathways are potentially complete as the groundwater impact related to the Huntsman facility is adjacent the Star Lake Canal Superfund Site; however, the related risk assessment is currently being evaluated as part of the Huntsman Site Wide Groundwater APAR. It would not be efficient to have both the Huntsman Site Wide Groundwater APAR and the Star Lake Canal RI evaluate the groundwater impact related to the Huntsman facility. The risk assessment information that is gathered during completion of the APAR will be included and discussed in the revised Draft Tier 1 RI Report.
27	General	Sarah Schreier TCEQ Technical Support Section Remediation Division	See 16 above. Please incorporate any referenced information from the Huntsman facility APAR into this report so that it is a stand alone document. Remember that the intended audience is the citizenry as well as the regulators.	All referenced information from the Huntsman facility APAR will be incorporated into the Draft Tier 1 RI Report. The referenced material is attached in the following groups: (1) 2-1507 Groundwater Report Tables, (2) 3-1507 Chemical Graphs, (3) 2689-02-Task 2 (Figures 4 through 31), (4) 06081084 Groundwater Multi-Inlet Piezometer (MIP) Data, (5) A-Zone Class Discussion from APAR, (6) Monitor Well Construction Diagrams, (7) Slug Tests, and (8) Water Sampling Logs.
28	General	Sarah Schreier TCEQ Technical Support Section Remediation Division	TCEQ continues to have concerns that the screening criteria contained in the approved Tier 1 RI Work Plan may not retain all COCs that would be retained under State of Texas rules. TCEQ will continue to insist that COCs which do not screen out under the criteria listed in 30 TAC §350.71 (k) be retained for further evaluation. The respondents have previously agreed to provide adequate information to allow TCEQ to conduct a parallel path risk assessment under 30 TAC §350.71 (k).	The project team understands that TCEQ has concerns regarding the screening criteria contained in the approved Tier 1 RI work plan. Specifically, the project team understands that TCEQ is concerned that some COCs may be screened using the approved screening criteria. The project team will continue to move forward with the work plan as approved by the EPA authorized remedial project manager.
29	General	Sarah Schreier TCEQ Technical Support Section Remediation Division	TCEQ reiterates the initial comment. The groundwater pathway for human health exposure needs to be evaluated as "complete or reasonably anticipated to be complete." Also, this report indicates that groundwater and surface water are in communication. Therefore, the groundwater migration to surface water exposure pathway should be evaluated as complete or potentially complete. Please revise the report accordingly, and remove the statement that "No potential pathway exists for human exposure to impacted groundwater at the site."	See the response to Comment No. 26.

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30	General	Sarah Schreier TCEQ Technical Support Section Remediation Division	Please incorporate any referenced information from the Huntsman facility APAR into this report so that it is a stand alone document. Remember that your intended audience is the citizenry as well as the regulators. Comment 54 is reiterated: Describe the collection methodology for "borehole water samples." Clarify whether these were literally taken from an open borehole or a temporary piezometer and whether it was collected via bailer or specify type of pump and flow rate (low flow or high flow?). Comments 55 and 56 are consolidated into two more general questions: What conclusions may be drawn from the data referenced? What level of reliance may be placed on the data referenced in evaluating questions relevant to the Star Lake Canal Site?	All referenced information from the Huntsman Site-Wide APAR will be incorporated into the Draft Tier 1 RI Report. The Huntsman Site Wide Groundwater APAR borehole water samples were collected from temporary piezometers constructed of 1 -inch diameter PVC riser, with 10-foot slotted PVC screens at the MIP-GP sample locations. The borehole water samples were collected by a low-flow sampling technique with the use of a peristaltic pump at a flow rate of 100 milliliters per minute. This borehole water sampling technique is a widely accepted method for collection of representative data and was used to establish the locations of monitoring wells for the groundwater monitoring network. (See response to Comment No. 27)
31		Sarah Schreier TCEQ Technical Support Section Remediation Division	TCEQs initial comment is reiterated and clarified: Include a more detailed analysis of what data needs to be collected in the next phase of field work and what questions remain to be answered. The conclusions section needs to include a detailed analysis of what study questions have been adequately answered, and which have not. For those study questions that have not been fully answered, an evaluation of the remaining data gaps is necessary to provide a foundation upon which the Work Plan for the Tier 2 Remedial Investigation can be built.	See attached response to Comments No. 2 and 4.
32	Original Item No. 34	Sarah Schreier TCEQ Technical Support Section Remediation Division	Determination of LHHCs with regards to Soil, and groundwater – TRRP Assessment Levels, which are by default residential, should be used in place of Tier 1 industrial PCLs. Also, the Soil PCL for the protection of class 1 groundwater should be considered unless the groundwater is demonstrated to either not be a groundwater bearing unit, or to meet the definition of a Class 3 groundwater bearing unit.	Since current land use of the site would result in exposure to constituents consistent with an industrial exposure scenario, TRRP Tier 1 Industrial PCLs provide adequate screening-level standards for the site. In addition during the Remedial Action land-use institutional controls will be addressed. The draft Tier 1 RI report will be revised to indicate the use of soil PCLs protective of Class 2 Groundwater, as classified in the Huntsman Site-Wide APAR. (See response to Comment No. 27)

RESPONSE TO COMMENT 2

COMMENT 2

COMMENT:

Work Plans are skeletal in comparison to the RI – they do not provide the detail and context of a full report. Reliance upon the Work Plan as the means to resolve complex technical issues limits the ability of the agencies to respond to new information. When a comment is presented that poses a thoughtful, logical issue with a solid technical basis it should be addressed in a direct manner. Specifically, item numbers 5, 7, 10, 11, 14, 20, 34, 36, 41, 48, 49, 77, 78, and 80 had an unsatisfactory response based upon the defense of an approved Work Plan. The issues identified in these comments should be addressed before moving forward with the RI.

RESPONSE:

The purpose of the Tier 1 RI was to gather information sufficient to support an informed risk management decision regarding the initial characterization of the nature and extent of impact at the site and the potential risk to ecological and human health receptors that utilize the site. The Tier 1 RIWP outlined three objectives including initial site characterization, completion of a Screening Level Ecological Risk Assessment (SLERA), and completion of a screening level human health risk assessment (HHRA).

The initial site characterization and sampling plan was based on a source and pathway approach to initial data collection. The source of the impact was defined as the historical discharge of upstream industries. Constituents were discharged into the surface water bodies of Jefferson Canal and Star Lake Canal. Subsequently the constituents were transported to other areas of the site and other environmental media within the site via mechanisms including deposition, sediment re-suspension, surface water transport, dredging, and erosion. Therefore, Tier 1 RI sample locations were strategically placed at locations along and adjacent to the potential transport pathways. Chemical constituents were detected in sample media including soil, surface water, and sediment at various locations throughout the transport pathways.

To assess the potential for risk to ecological and human receptors from exposure to these constituents by way of the various media, a SLERA and screening level HHRA were completed. The SLERA determined that potential ecological risk exists for receptors that utilize the site from exposure to certain chemical constituents. The SLERA identified a limited number of constituents which pose no risk to receptors and these constituents will not be further evaluated for ecological risk. However, the SLERA evaluated the receptor use of the entire site and therefore did not distinguish areas of the site that may or may not pose risk. The limited HHRA established screening level human health standards for chemical constituents based on existing guidance documents and identified environmental media in certain areas of the site in which specific chemical constituent concentrations exceeded the screening level human health criteria for an industrial exposure pathway.

Tier 1 results will be used to carefully plan the next iteration of investigation at the site. It is anticipated that the Tier 2 investigation will include further evaluation of the potential ecological and human health risks. A refinement and focused understanding of ecological effects will be achieved through completion of a Baseline Ecological Risk Assessment (BERA). The Tier 2 WP will outline the objectives of the BERA and provide a framework and detailed process for evaluation of relevant ecological lines of evidence. It will identify key data that must be collected in order to evaluate risks to receptors at the site from COPECs identified in the Tier 1 RI. This WP will focus on an evaluation of data gaps and collection of the appropriate data to fill these gaps and reduce levels of uncertainty associated with the SLERA. This data gap evaluation will include both human health and ecological data and will be performed with input from the stakeholders. The need for collection of additional sediment, soil and surface water samples will be evaluated and the rationale presented. In addition, a detailed plan that focuses on collection efforts on various receptor prey and food items will be outlined.

The human health risk will be further evaluated in the Tier 2 RI by additional sampling of specific media in locations of the site in which constituent concentrations exceeded the limiting human health criteria in that media in an attempt to further delineate the nature and extent of the impact. A toxicity and exposure assessment will be conducted to evaluate the potential for COPCs to cause adverse health effects in potential receptors.

RESPONSE TO COMMENT 4

COMMENT 4

COMMENT:

Comments 4, 7, 9, 28, and 72 are all related to showing how the data will be analyzed, explaining the DQO process, and explaining what will be accomplished in tier two of the RI. It would be best to discuss these issues in a scoping meeting prior to submission of the Tier Two RI work plan or report.

RESPONSE:

The DQOs for the Tier 1 RI were developed prior to data collection as part of the sampling design and the Tier 1 RI WP to develop a scientifically sound and resource-effective sampling plan. The following decisions were listed as part of the DQOs:

- 1.) Do potentially complete pathways exist by which ecological or human receptors are exposed to site constituents?
- 2.) Do chemical concentrations in sediments, bank soils, and surface water exceed human health screening criteria, which would thereby make them COPCs to public health?
- 3.) Do chemical concentrations in sediments, bank soils, and surface water exceed media-specific ecological screening criteria, which would thereby make them COPCs for ecological receptors?
- 4.) For identified COPCs, are potential risks to ecological and human receptors unacceptable?

The Tier 1 RI activities were designed to provide sufficient information and data for addressing these DQOs and making decisions. Subsequent to data collection and evaluation all four of the decisions can be made based on sufficient inputs to the decisions.

- 1.) Complete pathways were determined to exist by which both ecological and human receptors may be exposed to chemical constituents at the site. Exposure pathways were evaluated for the site and discussed in section 6.2 and shown on Figure 21 of the Draft Tier 1 RI Report.
- 2.) Chemical concentrations in sediment, soil, and surface water were evaluated against screening level human-health standards in section 7.0 of the Draft Tier 1 RI Report. The chemical constituents that exceeded the human-health criteria were discussed in section 7.2 of the Draft Tier 1 RI Report and are listed on Table 9 through 11.
- 3.) Chemical concentrations in sediments, soils and surface waters were evaluated against screening level ecological benchmarks (TCEQ and USEPA) in section 8.0 of the Draft Tier 1 RI Report. Chemical constituents that exceeded the ecological criteria for each media were discussed in section 8.2.3 of the Draft Tier 1 RI Report and are listed in Table 18A-E.
- 4.) Based on the results of the screening level assessment of the Tier 1 RI, potential risk at the site exists that requires further evaluation.

Tier 1 results will be used to carefully plan the next tier of investigation at the site. The Tier 2 RI will include further evaluation of the potential ecological and human health risks at the site as noted in response to Comment No. 2.

RESPONSE TO COMMENT 13

COMMENT 13

COMMENT:

Item No. 14 (corresponding Comment 7): We are still looking into the presence of dioxin in the site vicinity. It is known that Star Lake Canal/Jefferson Canal has received industrial waste water discharges from several local chemical manufacturing facilities for a number of years. It is also known that 2, 4, 5-T was found at some of these chemical companies (TNRCC, 1999) and that 2, 3, 7, 8-TCDD is a byproduct of the manufacture of 2, 4, 5-T and thus would be present in any 2, 4, 5-T product.

RESPONSE:

The June 1999 Texas Natural Resource Conservation Commission (TNRCC) Hazard Ranking System (HRS) Documentation Record was obtained from the files of its author at the TCEQ offices in Austin and a review was completed.

Historical analytical laboratory data pertinent to the cited comment was found in Reference Numbers 11 and 19. Approximately 21 soil samples were collected in October 1996 as part of the TRNCC Screening Site Inspection (SSI) and 22 soil samples were collected in March 1998 as part of the TRNCC Expanded Site Inspection (ESI). Soil samples were collected by TNRCC and analyzed for several constituents, including 2,4,5-Trichlorophenol (2,4,5-T), 2,4,6-Trichlorophenol (2,4,6-T), and 2,4-Dichlorophenol (2,4-D), and the analytical results were listed in the 1999 TNRCC Documentation Record. Analytical laboratory results for soil samples analyzed for 2,4,5-T, 2,4,6-T, and 2,4-D are shown in attached tabulation that accompanies this response. The analytical results indicate that the total number of samples collected was 43 and of the 43 total samples collected, no sample had detections of 2,4-D, 2,4,5-T, or 2,4,6-T above the laboratory detection/quantitation limit. Several of the sample results have elevated quantitation limits; however, the results do not show a single positive detection of the referenced constituents.

In addition, the formation of 2,3,7,8-TCDD from 2,4,5-T requires temperatures and pressures that are not found in the environment under normal conditions. There is no existing information in the historical document cited that indicates 2,4,5-T was manufactured by the chemical manufacturing facilities that historically discharged to Jefferson Canal or Star Lake Canal. Therefore, the analysis for 2,4,5-T and/or 2,3,7,8-T was not deemed necessary in the Tier 1 RI Work Plan and should not be further evaluated during subsequent iterations of the RI.

ATTACHMENT

ANALYTICAL DATA TABLE
(Reference Response to Comment No. 13)

TABULATION TO ACCOMPANY RESPONSE TO COMMENT NO. 13 FROM COMMENTS DATED OCTOBER 2007
ANALYTICAL LABORATORY DATA
STAR LAKE CANAL SUPERFUND SITE
TEXAS NATURAL RESOURCE CONSERVATION COMMISSION (TNRCC)
HRS DOCUMENTATION RECORD
JUNE 1999

No.	Sample ID	Sample Date	Matrix	Constituent Concentration (ug/kg)		
				2,4-Dichlorophenol (2,4-D)	2,4,6-Trichlorophenol (2,4,6-T)	2,4,5-Trichlorophenol (2,4,5-T)
1	FE-Y77	10/23/96	SOIL	9,000 U	9,000 U	23,000 U
2	FE-Y80	10/23/96	SOIL	660 U	660 U	1,700 U
3	FE-Y81	10/23/96	SOIL	630 U	630 U	1,600 U
4	FE-Y82	10/23/96	SOIL	650 U	650 U	1,600 U
5	FE-Y83	10/23/96	SOIL	890 U	890 U	2,200 U
6	FE-Y84	10/23/96	SOIL	30,000 U	30,000 U	76,000 U
7	FE-Y84DL	10/23/96	SOIL	61,000 U ¹	61,000 U ¹	150,000 U ¹
8	FE-Y85	10/23/96	SOIL	780 U	780 U	2,000 U
9	FE-Y86	10/23/96	SOIL	630 U	630 U	1,600 U
10	FE-Y87	10/23/96	SOIL	910 U	910 U	2,300 U
11	FE-Y88	10/23/96	SOIL	1,100 U	1,100 U	2,800 U
12	FE-Y89	10/23/96	SOIL	510 U	510 U	1,300 U
13	FE-Y90	10/23/96	SOIL	480 U	480 U	1,200 U
14	FE-Y91	10/23/96	SOIL	530 U	530 U	1,300 U
15	FE-Y92	10/23/96	SOIL	780 U	780 U	2,000 U
16	FE-Y93	10/23/96	SOIL	580 U	580 U	1,400 U
17	FE-Y93RE	10/23/96	SOIL	580 U	580 U	1,400 U
18	FE-Y94	10/23/96	SOIL	480 U	480 U	1,200 U
19	FE-Z01	10/23/96	SOIL	2,900 U	2,900 U	7,300 U
20	FE-Z02	10/23/96	SOIL	550 U	550 U	1,400 U
21	FE-Z03	10/23/96	SOIL	570 U	570 U	1,400 U
22	FE-Y11	03/10/98	SOIL	520 U	520 U	1,300 U
23	FE-Y12	03/10/98	SOIL	510 U	510 U	1,300 U
24	FE-Y12DL	03/10/98	SOIL	5,100 U ¹	5,100 U ¹	13,000 U ¹
25	FE-Y14	03/10/98	SOIL	22,000 U	22,000 U	56,000 U
26	FE-Y14DL	03/10/98	SOIL	2,200,000 U	2,200,000 U	5,600,000 U
27	FE-Y15	03/10/98	SOIL	240,000 U	240,000 U	600,000 U
28	FE-Y16	03/10/98	SOIL	570 U	570 U	1,400 U
29	FE-Y40	03/10/98	SOIL	670 U	670 U	1,700 U
30	FE-Y40DL	03/10/98	SOIL	2,700 U	2,700 U	6,800 U
31	FF-R36	03/10/98	SOIL	480 U	480 U	1,200 U
32	FF-R37	03/10/98	SOIL	480 U	480 U	1,200 U
33	FF-R39	03/10/98	SOIL	510 U	510 U	1,300 U
34	FF-R40	03/10/98	SOIL	520 U	520 U	1,300 U
35	FF-R41	03/10/98	SOIL	510 U	510 U	1,300 U
36	FF-R42	03/10/98	SOIL	500 U	500 U	1,200 U
37	FF-R43	03/10/98	SOIL	460 U	460 U	1,200 U
38	FF-R44	03/10/98	SOIL	440 U	440 U	1,100 U
39	FF-R45	03/10/98	SOIL	530 U	530 U	1,300 U
40	FF-R46	03/10/98	SOIL	570 U	570 U	1400 U
41	FF-R47	03/10/98	SOIL	540 U	540 U	1,400 U
42	FF-R49	03/10/98	SOIL	690 U	690 U	1,700 U
43	FF-R50	03/10/98	SOIL	600 U	600 U	1,500 U

Notes: The data recorded appears to be the result of sample collection during the October 1996 and the March 1998 collection episodes.

Analysis of soil samples FE-Y80 through FE-Z03 was performed by Compuchem Environmental Services of Research Triangle, NC and data was found in Reference 19 of the June 1999 TNRCC HRS Documentation Record.

Analysis of soil samples FE-Y11 through FF-R50 was performed by Clayton Group Services, Inc. of Novi, MI and data was found in Reference 11 of the June 1999 TNRCC HRS Documentation Record.

All samples were collected by TRNCC.

ug/kg = micrograms per kilogram

U = Not detected at reported detection limit

¹ = Results not recommended for use because associated QA/QC laboratory evaluation indicated the laboratory performance was inferior to that of other analyses.

ATTACHMENT

TABLE 6-1
(Reference Response to Comment No. 16 and No. 17)

TABLE 6-1
EXPOSURE FACTORS USED IN THE SLERA
STAR LAKE CANAL SUPERFUND SITE

RECEPTOR OF INTEREST	BODY WEIGHT	IR _{Food}	IR _{Water}	IR _{Sediment}	SOIL/SEDIMENT IN DIET (percent dry weight) ³⁵	WATER IN DIET (percent dry weight) ³⁵	DIETARY COMPOSITION	HOME RANGE	REFERENCES OR SOURCES
Green Heron	210 g ¹⁹	0.10 g/g-day ²¹	0.10 g/g-day ²²	0.0002 kg/day ²⁸	2% ³²	49.76%	Fish 45% ²³ Crustacea 20% ²³ Insects 23% ²³ Others 13% ²³	4.5 ha ³⁶	Sibley 2003, Hylebos 2007; 19 -- weight as listed in Sibley 2003, 21 -- IR (Food) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 22 -- IR (Water) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 28 -- calculated using Great Blue Heron Sediment ingestion rate (0.0017 kg/day) in Utah Gov - Exposure Assessment. Value is based on proportional differences due to body weight (GBH = 2.2 kg).
White-faced Ibis	610 g ¹⁹	0.07 g/g-day ²¹	0.07 g/g-day ²²	0.0005 kg/day ²⁸	12.9% ³⁴	49.71%	Insects and Spiders 58% ²⁰ Worms 38% ²⁰ Snails 2% ²⁰ Leeches 2% ²⁰ Other 1% ²⁰	4.5 ha ³⁶	Sibley 2003, Ryder and Manry 1994; 19 -- weight as listed in Sibley 2003; 21 -- IR (Food) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 22 -- IR (Water) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 28 -- calculated using Great Blue Heron Sediment ingestion rate (0.0017 kg/day) in Utah Gov - Exposure Assessment. Value is based on proportional differences due to body weight (GBH = 2.2 kg); 34 -- Pierotti and Annett 1987 as presented in USEPA 1993; 20 -- Dietary items from Ryder and Manry 1994
Belted Kingfisher	147.3 g ¹	0.50 g/g-day ²	0.11 g/g-day ²	0.0002 kg/day ²⁹	2% ³²	17.98%	Fish 46% ³ Crustacea 5% ³ Insects 19% ³ Amphibians 27% ³ Birds and Mammals 1% ³ Unknown 2% ³	1.16 km shoreline ⁴	USEPA 1993; 1 -- average of adult mean body weights presented in USEPA 1993; 2 -- mean value presented in USEPA 1993; 29 -- No sediment ingestion data found for Kingfisher so information on sediment in dietary items used to calculate sediment ingestion rate (0.0018g/g-day) as presented in Bayou Verdine 2001. This ingestion rate was multiplied by the weight in USEPA 1993 to obtain rate used in calculations; 32 -- Tyler 1973 as presented in USEPA 1993; 3 -- values from Alexander 1977 (lower Michigan on a lake) as presented in USEPA 1993; 4 -- average of mean territory size values presented in USEPA 1993.
Marsh Wren	10.38 g ¹	0.87 g/g-day ⁵	0.27 g/g-day ⁶	0.00000196 kg/day ²⁷	0% ³³	23.72%	Insects 81.6% ⁸ Arthropods 12.0% ⁹ Mollusks 3.75% ¹⁰ Other 3.9% ¹¹	0.010 ha ⁷	USEPA 1993; 1 -- average of adult mean body weights presented in USEPA 1993; 5 -- average of adult mean food ingestion rates presented in USEPA 1993; 6 -- average of adult mean water ingestion rates presented in USEPA 1993; 27 -- calculated from data presented in USEPA 1999; 33 -- Jorgenson et al 1991 as presented in USEPA 1993; 8 -- sum of all insects presented in USEPA 1993. Numbers for summer and winter diets were averaged; 9 -- sum of all arthropods presented in USEPA 1993. Numbers for summer and winter diets were averaged; 10 -- numbers for mollusks in summer and winter diets were averaged; 11 -- numbers for other dietary components in summer and winter diets were averaged; 7 -- average of mean territory size values for Georgia saltmarsh (Kale 1965) presented in USEPA 1993.
Mallard Duck	1204 g ¹	0.05 g/g-day ²¹	0.57 g/g-day ⁶	0.0019 kg/day ²⁶	1% ³²	91.69%	Plants 92.2% ¹² Snails 1.0% ¹³ Other 6.8% ¹³	434.8 ha ¹⁴	USEPA 1993; 1 -- average of adult mean body weights presented in USEPA 1993; 21 -- IR (Food) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 6 -- average of adult mean water ingestion rates presented in USEPA 1993; 26 -- calculated from values in Utah Gov - Exposure Assessment; 32 -- Tyler 1973 as presented in USEPA 1993; 12 -- sum of all vegetation consumed in Louisiana coastal marsh (Dillon 1959) as presented in USEPA 1993; 13 -- in Louisiana coastal marsh (Dillon 1959) as presented in USEPA 1993; 14 -- average of mean home range size values presented in USEPA 1993.
Muskrat	1174 g ¹	0.30 g/g-day ⁵	0.975 g/g-day ⁶	0.0011 kg/day ²⁶	9.4% ³²	76.42%	Plants 97% ¹⁵ Other 3% ¹⁵	0.13 ha ¹⁴	USEPA 1993; 1 -- average of adult mean body weights presented in USEPA 1993; 5 -- average of adult mean food ingestion rates presented in USEPA 1993; 6 -- average of adult mean water ingestion rates presented in USEPA 1993; 26 -- calculated from values in Utah Gov - Exposure Assessment; 32 -- Tyler 1973 as presented in USEPA 1993; 15 -- dietary composition in a brackish marsh (Willner et al 1975) as presented in USEPA 1993; 14 -- average of mean home range size values presented in USEPA 1993.
Raccoon	5600 g ²⁴	0.05 g/g-day ²¹	0.0825 g/g-day ⁶	0.11 kg/day ²⁵	9.4% ³⁰	73.29%	Plants 58.7% ¹⁷ Insects 8.2% ¹⁷ Worms 7.2% ¹⁷ Amphibians 4.4% ¹⁷ Reptiles 3.0% ¹⁷ Mollusks 1.9% ¹⁷ Birds and Mammals 15.8% ¹⁷ Carrion 1.5% ¹⁷ Unknown (including fish and crustacea) 0.2% ¹⁷	52 ha ¹⁸	USEPA 1993; 24 -- average of all raccoon body weights in USEPA 1993; 21 -- IR (Food) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993; 6 -- average of adult mean water ingestion rates presented in USEPA 1993; 25 -- value presented in Quantico 2003; 30 -- Cummins and Wuycheck 1971 as presented in USEPA 1993; 17 -- dietary composition in New York (Hamilton 1951) as presented in USEPA 1993; 18 -- average of mean Georgia coastal home range size values (Lotze 1979) as presented in USEPA 1993.

Notes:

ha = hectare
1 -- average of adult mean body weights presented in USEPA 1993

2 -- mean value presented in USEPA 1993

3 -- values from Alexander 1977 (lower Michigan on a lake) as presented in USEPA 1993

4 -- average of mean territory size values presented in USEPA 1993

5 -- average of adult mean food ingestion rates presented in USEPA 1993

6 -- average of adult mean water ingestion rates presented in USEPA 1993

7 -- average of mean territory size values for Georgia saltmarsh (Kale 1965) presented in USEPA 1993

8 -- sum of all insects presented in USEPA 1993. Numbers for summer and winter diets were averaged.

9 -- sum of all arthropods presented in USEPA 1993. Numbers for summer and winter diets were averaged.

10 -- numbers for mollusks in summer and winter diets were averaged.

11 -- numbers for other dietary components in summer and winter diets were averaged.

12 -- sum of all vegetation consumed in Louisiana coastal marsh (Dillon 1959) as presented in USEPA 1993

13 -- in Louisiana coastal marsh (Dillon 1959) as presented in USEPA 1993

14 -- average of mean home range size values presented in USEPA 1993

15 -- dietary composition in a brackish marsh (Willner et al 1975) as presented in USEPA 1993

16 -- average of adult mean body weights in Alabama (Johnson 1970) as presented in USEPA 1993

17 -- dietary composition in New York (Hamilton 1951) as presented in USEPA 1993

18 -- average of mean Georgia coastal home range size values (Lotze 1979) as presented in USEPA 1993

19 -- weight as listed in Sibley 2003

20 -- Dietary items from Ryder and Manry 1994

21 -- IR (Food) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993

22 -- IR (Water) calculated based on allometric equation provided by Nagy (1987) as detailed in USEPA 1993

23 -- dietary composition as presented in Hylebos 2007

24 -- average of all raccoon body weights in USEPA 1993

25 -- value presented in Quantico 2003

26 -- calculated from values in Utah Gov - Exposure Assessment

27 -- calculated from data presented in USEPA 1999

28 -- calculated using Great Blue Heron Sediment ingestion rate (0.0017 kg/day) in Utah Gov - Exposure Assessment. Value is based on proportional differences due to body weight (GBH = 2.2 kg).

29 -- No sediment ingestion data found for Kingfisher so information on sediment in dietary items used to calculate sediment ingestion rate (0.0018g/g-day) as presented in Bayou Verdine 2001.

This ingestion rate was multiplied by the weight in USEPA 1993 to obtain rate used in calculations.

30 -- Cummins and Wuycheck 1971 as presented in USEPA 1993

31 -- Golley 1961 as presented in USEPA 1993

32 -- Tyler 1973 as presented in USEPA 1993

33 -- Jorgenson et al 1991 as presented in USEPA 1993

34 -- Pierotti and Annett 1987 as presented in USEPA 1993

35 -- All percent water in diet numbers calculated by summing food, water and sediment ingestion rates and then dividing the water ingestion rate by the sum of all ingestion rates.

36 -- based on USEPA 1993 estimates for the Great Blue Heron

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ATTACHMENT

HUNTSMAN AFFECTED PROPERTY ASSESSMENT REPORT

(APAR)

(Reference Response to Comment No. 27, No. 30, and No. 32)

The supporting information is organized as:

- 2-1507 Groundwater Report Tables
- 3-1507 Chemical Graphs
- 2689-02-Task 2 (Figures 4 through 31)
- 06081084 Groundwater MIP Data
- A-Zone Class Discussion from APAR
- Monitor Well Construction Diagram
- Slug Test
- Water Sampling Logs

2-1507 GROUNDWATER REPORT TABLES

Table 1. Groundwater Corrective Action Monitoring Network, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Well Designation	Well Depth (ft bls)	Screened Interval (ft bls)	Top of Casing Elevation (ft msl)	Casing Diameter (inch)
<i>"A-Zone" Interior Long-Term Monitoring Wells</i>				
MW-6	30.0	19.5-29.5	16.76	2
MW-10	33.0	20.5-30.5	19.17	2
MW-11	32.5	20.0-30.0	17.46	2
MW-15	30.0	17.5-27.5	17.81	2
MW-17	30.5	18.0-28.0	20.29	2
<i>"A-Zone" Outer Long-Term Monitoring Wells</i>				
MW-4	30.0	19.0-29.0	17.63	2
MW-7	32.0	20.0-30.0	17.65	2
MW-12	33.0	20.5-30.5	19.75	2
MW-14	34.0	21.5-31.5	20.13	2
MW-16	30.5	18.0-28.0	20.13	2
MW-18	30.0	17.5-27.5	19.08	2
MW-29	30.0	17.5-27.5	13.19	2
MW-30	29.0	16.5-26.5	10.88	2
MW-31	31.0	18.5-28.5	14.94	2
<i>"A-Zone" Point-of-Compliance Monitoring Wells</i>				
MW-5	26.0	15.5-25.5	12.15	2
MW-19	32.0	19.5-29.5	19.92	2
MW-20	26.0	13.5-23.5	9.90	2
MW-21	36.0	23.5-33.5	24.58	2
MW-22	20.0	7.5-17.5	22.19	2
MW-32	26.0	15.5-25.5	9.66	2
MW-33	31.5	21.0-31.0	15.99	2
MW-34	33.5	23.0-33.0	16.01	2
MW-35	36.0	25.5-35.5	19.78	2
RFI-12	26.0	13.5-23.5	16.25	2
<i>"B-Zone" Vertical Compliance Monitoring Wells</i>				
MW-4D	105.0	93.5-103.5	18.69	2
MW-6D	90.0	79.0-89.0	16.81	2
MW-11D	87.0	74.5-84.5	17.50	2
MW-18D	86.5	74.0-84.0	19.00	2
MW-19D	95.0	82.5-95.5	19.83	2

ft bls Feet below land surface.
 ft msl Feet mean sea level.

ARCADIS

Table 2. Groundwater Corrective Action Analytical Program, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

<u>Volatile Organic Compounds (8260B)</u>		
Benzene	1,2-Dichloroethene (total)	Vinyl chloride
Carbon disulfide	1,2-Dichloropropane	Styrene
Chlorobenzene	1,4-Dioxane	Ethylbenzene
Chloroethane	1,1,1-Trichloroethane	Toluene
Chloroform	1,1,2-Trichloroethane	Xylenes, Total
1,1-Dichloroethane	Trichloroethene	Ethylene Dibromide (1,2-Dibromoethane)
1,2-Dichloroethane	1,2,3-Trichloropropane	Methyl Ethyl Ketone (2-Butanone)
1,1-Dichloroethene	Tetrachloroethene	Methyl tert-butyl ether

<u>Semivolatile Organic Compounds (8270C)</u>		
Acenaphthene	3 & 4-Methylphenol (m-Cresol and p-Cresol)	Naphthalene
Acenaphthylene	Dibenz(a,h)anthracene	4-Nitrophenol
Anthracene	Di-n-butyl phthalate	Phenanthrene
Benzo(a)anthracene	1,2-Dichlorobenzene	Phenol
Benzo(b)fluoranthene	1,3-Dichlorobenzene	Pyrene
Benzo(k)fluoranthene	1,4-Dichlorobenzene	Pyridine
Benzo(g,h,i)perylene	Diethyl phthalate	Quinoline
Benzo(a)pyrene	2,4-Dimethylphenol	Indene
Bis(2-chloroethyl)ether	Dimethyl phthalate	Dibenz(a,h)acridine
Bis(2-chloroisopropyl)ether	2,4-Dinitrophenol	1-Methylnaphthalene
Bis(2-ethylhexyl)phthalate	Fluoranthene	2-Methylnaphthalene
Chrysene	Fluorene	Thiophenol (Benzenthiol)
2-Methylphenol (o-Cresol)	Indeno(1,2,3-cd)pyrene	

<u>Metals (6020)</u>		
Antimony	Chromium	Mercury ⁽²⁾
Arsenic	Cobalt	Nickel
Barium	Cyanide ⁽¹⁾	Selenium
Beryllium	Lead	Silver
Cadmium	Manganese	Vanadium
		Zinc

<u>Field Parameters</u>		
pH	Specific Conductance	Temperature Salinity

(1) Analyzed by USEPA Method E335.2.

(2) Analyzed by USEPA Method 7470A.

Table 3. Potentiometric Data (June 5, 2007), Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Well Number	Top of Casing Elevation (ft NAVD)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Groundwater Elevation (ft NAVD)
"A Zone"				
MW-1	10.83	30.87	2.32	8.51
MW-2	13.63	29.55	3.37	10.26
MW-3	(1)	(1)	NA	NA
MW-4	16.72	31.00	7.65	9.07
MW-5	12.25	27.62	9.61	2.64
MW-6	15.77	32.00	4.42	11.35
MW-7	16.78	30.01	4.65	12.13
MW-8	13.39	25.52	6.50	6.89
MW-9	5.40	22.50	7.67	-2.27
MW-10	16.68	37.00	5.81	10.87
MW-11	14.96	36.68	4.86	10.10
MW-12	16.80	33.74	6.98	9.82
MW-13	17.91	37.62	5.34	12.57
MW-14	17.67	38.02	6.21	11.46
MW-15	15.39	33.65	4.74	10.65
MW-16	17.68	34.35	6.64	11.04
MW-17	17.98	33.85	5.37	12.61
MW-18	16.57	27.90	5.99	10.58
MW-19	17.49	35.35	6.46	11.03
MW-20	8.26	27.77	8.87	-0.61
MW-21	22.02	37.73	15.52	6.50
MW-22	19.74	22.60	13.75	5.99
MW-23	12.17	31.60	6.56	5.61
MW-24	9.12	27.58	6.62	2.50
MW-25	11.52	32.10	13.19	-1.67
MW-26	10.25	32.44	12.55	-2.30
MW-27	16.72	31.19	10.61	6.11
MW-28	7.83	27.86	9.92	-2.09
MW-29	12.26	31.40	5.79	6.47
MW-30	10.05	32.00	4.79	5.26
MW-31	14.14	32.80	5.81	8.33
MW-32	9.57	29.18	5.97	3.60
MW-33	15.06	34.33	8.92	6.14

Table 3. Potentiometric Data (June 5, 2007), Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Well Number	Top of Casing Elevation (ft NAVD)	Total Depth (ft below TOC)	Depth to Water (ft below TOC)	Groundwater Elevation (ft NAVD)
<u>"A Zone" (continued)</u>				
MW-34	15.16	36.07	7.23	7.93
MW-35	18.88	38.14	11.11	7.77
MW-36	18.34	32.13	6.84	11.50
MW-37	16.65	35.36	5.62	11.03
RFI-1R	14.49	32.72	4.76	9.73
RFI-9R	15.56	28.70	5.95	9.61
RFI-10	16.03	32.85	6.09	9.94
RFI-11	13.00	30.62	7.52	5.48
RFI-12	13.78	29.48	5.75	8.03
<u>"B-Zone"</u>				
MW-1D	11.80	65.04	11.37	0.43
MW-2D	14.16	72.99	13.62	0.54
MW-4D	17.77	106.54	17.49	0.28
MW-6D	15.83	92.20	15.66	0.17
MW-7D	17.46	85.00	17.03	0.43
MW-8D	13.30	76.08	13.19	0.11
MW-11D	14.99	91.91	14.78	0.21
MW-12D	16.91	91.81	16.72	0.19
MW-13D	17.93	89.85	17.65	0.28
MW-15D	15.67	85.30	15.43	0.24
MW-16D	17.73	104.75	17.33	0.40
MW-18D	16.49	90.72	16.32	0.17
MW-19D	17.42	97.10	17.11	0.31
MW-22D	19.89	92.36	19.29	0.60
MW-28D	7.75	79.70	8.76	-1.01

(1) Could not locate.

ft msl Feet mean sea level.

ft below TOC Feet below top of casing.

NA Not Applicable.

ARCADIS

Table 4.

"A-Zone" Field Parameters, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Field Parameters	Interior Long-Term Wells				
	MW-6	MW-10	MW-11	MW-15	MW-17
pH (s.u)	5.60	6.26	6.01	6.04	6.38
Spec. Cond. ($\mu\text{mhos}/\text{cm}$)	3,055	2,745	14,978	3,343	1,609
Temperature ($^{\circ}\text{F}$)	74.12	74.24	77.91	75.74	74.11
Salinity (ppt)	1.59	1.42	8.69	1.75	0.81

$^{\circ}\text{F}$ Degrees Fahrenheit.
ppt Parts per thousand.
s.u. Standard Units.
 $\mu\text{mhos}/\text{cm}$ Micromhos per centimeter.

ARCADIS

Table 4.

"A-Zone" Field Parameters, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Field Parameters	Outer Long-Term Wells								
	MW-4	MW-7	MW-12	MW-14	MW-16	MW-18	MW-29	MW-30	MW-31
pH (s.u)	5.89	6.43	6.67	6.71	5.43	6.55	6.64	6.68	6.65
Spec. Cond. ($\mu\text{mhos}/\text{cm}$)	2,901	408	1,003	844	1,949	1,087	1,890	2,004	956
Temperature ($^{\circ}\text{F}$)	73.47	76.16	75.13	74.47	73.50	76.90	73.40	74.44	76.43
Salinity (ppt)	1.51	0.19	0.50	0.41	0.99	0.54	0.96	1.02	0.47

$^{\circ}\text{F}$ Degrees Fahrenheit.
ppt Parts per thousand.
s.u. Standard Units.
 $\mu\text{mhos}/\text{cm}$ Micromhos per centimeter.

ARCADIS

Table 4.

"A-Zone" Field Parameters, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Field Parameters	Point-of-Compliance Wells									
	MW-5	MW-19	MW-20	MW-21	MW-22	MW-32	MW-33	MW-34	MW-35	RFI-12
pH (s.u)	6.79	6.78	6.85	7.01	6.86	5.95	6.95	7.15	6.87	6.92
Spec. Cond. ($\mu\text{mhos}/\text{cm}$)	955	382	1,579	505	557	175,222	961	531	1,273	553
Temperature ($^{\circ}\text{F}$)	72.28	72.17	72.63	74.58	71.85	73.93	73.76	75.58	72.77	70.81
Salinity (ppt)	0.47	0.18	0.80	0.24	0.27	146.41	0.47	0.26	0.64	0.27

$^{\circ}\text{F}$ Degrees Fahrenheit.

ppt Parts per thousand.

s.u. Standard Units.

$\mu\text{mhos}/\text{cm}$ Micromhos per centimeter.

ARCADIS

Table 5.

"B-Zone" Field Parameters, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Field Parameters	MW-4D	MW-6D	MW-11D	MW-18D	MW-19D
pH (s.u)	12.22	7.21	7.24	7.13	7.13
Spec. Cond. ($\mu\text{mhos}/\text{cm}$)	4,334	3,377	3,536	4,015	2,328
Temperature ($^{\circ}\text{F}$)	75.38	73.18	74.61	76.77	73.81
Salinity (ppt)	2.30	1.77	1.86	2.12	1.20

$^{\circ}\text{F}$

Degrees Fahrenheit.

ppt

Parts per thousand.

s.u.

Standard Units.

$\mu\text{mhos}/\text{cm}$

Micromhos per centimeter.

Table 6.

"A-Zone" Volatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event),
Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Interior Long-Term Wells							
	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	MW-6	MW-10	MW-11	MW-15	DUP-02 MW-15	MW-17
	Volatile Organic Compounds (VOCs) (8260B) (mg/L)							
1,1,1-Trichloroethane								
1,1,1-Trichloroethane	0.200	0.200	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	0.005	0.005	4J	0.066	2.9	2.8J	2.6J	1.3J
1,1-Dichloroethane	4.9	15	0.01	0.054	0.035	0.007	0.008	0.006
1,1-Dichloroethene	0.007	0.007	0.25E	1.6J	1J	0.14	0.16	0.22E
1,2,3-Trichloropropane	0.00013	0.00029	17	1.2J	1.9J	1.4J	1.3J	0.44E
1,2-Dibromoethane	0.000050	0.000050	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	0.005	0.005	120	4.8	44	50	48	67
1,2-Dichloroethene (total)	0.070 ⁽¹⁾	0.070 ⁽¹⁾	0.556E	0.244	0.362	2.4J	2.4J	0.11
1,2-Dichloropropane	0.005	0.005	320	18	24	31	30	42
1,4-Dioxane	0.083	0.19	4	0.55	1.9	1.1	1.6	0.74
2-Butanone	15	44	0.018	0.026	0.008J	0.02	0.021	<0.0047
Benzene	0.005	0.005	7.4J	14	6.6	0.13	0.14	0.65J
Carbon disulfide	2.4	7.3	<0.00042	<0.00042	0.003J	<0.00042	<0.00042	<0.00042
Chlorobenzene	0.100	0.100	0.004J	0.002J	0.001J	<0.00028	<0.00028	<0.00028
Chloroethane	9.8	29	<0.00065	0.011	0.006	<0.00065	<0.00065	0.021
Chloroform	0.24	0.730	4.2J	0.27J	0.92J	16	16	0.57J
Ethylbenzene	0.700	0.700	0.05	0.043	0.12	0.006	0.006	0.027
Methyl tert-butyl ether	0.24	0.730	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	0.100	0.100	0.026	0.026	0.12	0.004J	0.004J	0.003J
Tetrachloroethene	0.005	0.005	0.06	0.039	0.076	0.018	0.02	0.008
Toluene	1	1	0.82J	1J	0.81J	0.034	0.037	0.082
Trichloroethene	0.005	0.005	<0.00044	0.054	<0.00044	<0.00044	<0.00044	<0.00044
Vinyl chloride	0.002	0.002	5.9	1.8	2.6	3	2.9	0.8E
m,p-Xylene	10	10	0.062	0.04	0.12	0.018	0.019	0.011
o-Xylene	10	10	0.037	0.032	0.075	0.01	0.01	0.007
Xylenes, Total	10	10	0.099	0.072	0.195	0.028	0.029	0.018
Total VOCs			484.492	43.929	87.751	108.115	105.254	114.013

(1) The Tier 1 PCL for cis-1,2-dichloroethene was used as the Tier 1 PCL for 1,2-dichloroethene (total).

Less than.

< ^{GW} GW_{ING} Protective concentration level for groundwater ingestion.

E Estimated value exceeds calibration curve.

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L Milligram per liter.

ND None detected.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 6.

"A-Zone" Volatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event),
Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Outer Long-Term Wells									
	MW-4	MW-7	MW-12	MW-14	MW-16	MW-18	MW-29	DUP-01 MW-29	MW-30	MW-31		
Volatile Organic Compounds (VOCs) (8260B) (mg/L) (continued)												
1,1,1-Trichloroethane	0.200	0.200	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	0.005	0.005	<0.00049	<0.00049	0.002J	<0.00049	<0.00049	0.023	0.01	<0.00049	<0.00049	<0.00049
1,1-Dichloroethane	4.9	15	<0.00087	<0.00087	0.022	<0.00087	0.005	0.32	<0.00087	<0.00087	<0.00087	0.008
1,1-Dichloroethene	0.007	0.007	0.001J	<0.00076	0.03	<0.00076	0.026	0.71	0.018	0.018	<0.00076	0.048
1,2,3-Trichloropropane	0.00013	0.00029	<0.00036	0.02	0.002J	<0.00036	<0.00036	0.01	0.015	0.014	<0.00036	<0.00036
1,2-Dibromoethane	0.000050	0.000050	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	0.005	0.005	0.065	0.66	6.9	<0.00039	0.14	0.061	0.048	0.047	0.008	0.002J
1,2-Dichloroethene (total)	0.070 ⁽¹⁾	0.070 ⁽¹⁾	0.115	<0.00064	<0.00064	0.01J	0.039	0.196	0.17	0.159	<0.00064	0.002J
1,2-Dichloropropane	0.005	0.005	<0.0004	0.68	0.47J	<0.0004	<0.0004	1.1	0.83	0.82	0.062	0.022
1,4-Dioxane	0.083	0.19	<0.058	<0.058	0.18J	<0.058	<0.058	0.57	<0.058	<0.058	<0.058	<0.058
2-Butanone	15	44	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
Benzene	0.005	0.005	<0.00017	<0.00017	0.005	0.24	<0.00017	0.004J	0.006	0.006	<0.00017	0.001J
Carbon disulfide	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Chlorobenzene	0.100	0.100	<0.00028	<0.00028	9.4	<0.00028	<0.00028	0.006	<0.00028	<0.00028	<0.00028	<0.00028
Chloroethane	9.8	29	<0.00065	<0.00065	0.009	<0.00065	0.005	0.002J	0.002J	0.001J	<0.00065	<0.00065
Chloroform	0.24	0.730	0.002J	<0.00031	0.003J	<0.00031	0.001J	0.023	0.19	0.18	<0.00031	<0.00031
Ethylbenzene	0.700	0.700	<0.00031	<0.00031	<0.00031	0.003J	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Methyl tert-butyl ether	0.24	0.730	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	0.100	0.100	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Tetrachloroethylene	0.005	0.005	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	0.009	<0.00068	<0.00068	<0.00068	<0.00068
Toluene	1	1	<0.00028	<0.00028	<0.00028	0.019	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Trichloroethylene	0.005	0.005	0.048	<0.00044	0.003J	<0.00044	0.012	0.012	<0.00044	<0.00044	<0.00044	0.005
Vinyl chloride	0.002	0.002	0.005	<0.00062	0.18	<0.00062	0.01	0.34	0.1	0.099	<0.00062	0.078
m,p-Xylene	10	10	<0.00047	<0.00047	0.001J	0.002J	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047
o-Xylene	10	10	<0.00018	<0.00018	<0.00018	0.001J	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Xylenes, Total	10	10	<0.00018	<0.00018	0.001J	0.003J	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Total VOCs			0.236	1.360	17.208	0.269	0.238	3.386	1.389	1.354	0.070	1.466

(1) The Tier 1 PCL for cis-1,2-dichloroethene was used as the Tier 1 PCL for 1,2-dichloroethene (total).

< Less than.

^{GW} GW_{ING} Protective concentration level for groundwater ingestion.

E Estimated value exceeds calibration curve.

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L Milligram per liter.

ND None detected.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential as

Table 6.

"A-Zone" Volatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event),
Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Point-of-Compliance Wells								
	MW-5	MW-19	MW-20	MW-21	MW-22	MW-32	MW-33	MW-34	MW-35	RFI-12	
Volatile Organic Compounds (VOCs) (8260B) (mg/L) (continued)											
1,1,1-Trichloroethane	0.200	0.200	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	0.005	0.005	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049
1,1-Dichloroethane	4.9	15	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087
1,1-Dichloroethene	0.007	0.007	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
1,2,3-Trichloropropane	0.00013	0.00029	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dibromoethane	0.000050	0.000050	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	0.005	0.005	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
1,2-Dichloroethene (total)	0.070 ⁽¹⁾	0.070 ⁽¹⁾	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064
1,2-Dichloropropane	0.005	0.005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
1,4-Dioxane	0.083	0.19	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058
2-Butanone	15	44	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
Benzene	0.005	0.005	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Carbon disulfide	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Chlorobenzene	0.100	0.100	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Chloroethane	9.8	29	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065
Chloroform	0.24	0.730	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Ethylbenzene	0.700	0.700	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Methyl tert-butyl ether	0.24	0.730	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	0.100	0.100	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Tetrachloroethylene	0.005	0.005	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Toluene	1	1	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Trichloroethene	0.005	0.005	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Vinyl chloride	0.002	0.002	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
m,p-Xylene	10	10	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047
o-Xylene	10	10	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Xylenes, Total	10	10	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Total VOCs			ND	ND	ND	ND	ND	ND	ND	ND	ND

(1) The Tier 1 PCL for cis-1,2-dichloroethene was used as the Tier 1 PCL for 1,2-dichloroethene (total).
Less than.

< ^{GW} GW_{ING} Protective concentration level for groundwater ingestion.

E Estimated value exceeds calibration curve.

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L Milligram per liter.

ND None detected.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Interior Long-Term Wells					
	MW-6	MW-10	MW-11	MW-15	DUP-02 MW-15	MW-17		
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L)								
1,2-Dichlorobenzene	0.600	0.600	<0.0055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055
1,3-Dichlorobenzene	0.73	2.2	<0.0058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058
1,4-Dichlorobenzene	0.075	0.075	<0.0054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054
1-Methylnaphthalene	1.7	5.1	<0.0066	0.001J	0.001J	0.007	0.007	0.003
2,4-Dimethylphenol	0.49	1.5	<0.0033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
2,4-Dinitrophenol	0.049	0.15	<0.0051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
2-Methylnaphthalene	0.098	0.29	<0.007	0.001J	0.001J	0.006	0.006	0.002J
2-Methylphenol	1.2	3.7	<0.0035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
3 & 4-Methylphenol	0.12	0.37	<0.0033	0.007	<0.00033	<0.00033	<0.00033	0.003
4-Nitrophenol	0.049	0.15	<0.0035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
Acenaphthene	1.5	4.4	<0.0045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Acenaphthylene	1.5	4.4	<0.0046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Anthracene	7.3	22	<0.0044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Benz(a)anthracene	0.0013	0.0028	<0.0042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Benzo(a)pyrene	0.0002	0.0002	<0.0041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(b)fluoranthene	0.0013	0.0028	<0.0041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(g,h,i)perylene	0.73	2.2	<0.0048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Benzo(k)fluoranthene	0.013	0.028	<0.0051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
Bis(2-chloroethyl)ether	0.00083	0.0019	45	7.2	0.64	9.1	12	2.1
Bis(2-chloroisopropyl)ether	0.013	0.029	73	17	5.1	5.2	6.2	4.8
Bis(2-ethylhexyl)phthalate	0.006	0.006	<0.0062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
Chrysene	0.13	0.28	<0.0043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Dibenz(a,h)acridine	0.00076	0.0017	<0.0042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Interior Long-Term Wells					
			MW-6	MW-10	MW-11	MW-15	DUP-02 MW-15	MW-17
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L) (Continued)								
Dibenz(a,h)anthracene	0.0002	0.00028	<0.0044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Diethyl phthalate	20	58	<0.0039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Dimethyl phthalate	20	58	<0.0079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
Di-n-butyl phthalate	2.4	7.3	<0.0042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Fluoranthene	0.98	2.9	<0.0048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Fluorene	0.98	2.9	<0.0044	<0.00044	<0.00044	<0.00044	0.0005J	<0.00044
Indene	0.49	1.5	<0.12	0.033	0.098E	0.02J	0.024J	0.06E
Indeno(1,2,3-cd)pyrene	0.0013	0.0028	<0.0046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Naphthalene	0.49	1.5	0.018J	0.014	0.03	0.093E	0.1E	0.086E
Phenanthrene	0.73	2.2	<0.0043	<0.00043	<0.00043	0.001J	0.001J	<0.00043
Phenol	7.3	22	<0.0053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Pyrene	0.73	2.2	<0.0045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Pyridine	0.024	0.073	<0.015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Quinoline	0.0003	0.00068	<0.0061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061
Thiophenol	0.00024	0.00073	<0.088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088
Total SVOCs			118.018	24.256	5.87	14.427	18.3385	7.054

- (1) The Tier 1 PCL for 4-methylphenol was used as the Tier 1 PCL for 3 & 4-methylphenol.
 < Less than.
 E Estimated value exceeds calibration curve.
^{GW} GW_{ING} Protective concentration level for groundwater ingestion.
 J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.
 mg/L Milligram per liter.
 ND None detected.
 Detected concentrations are shown in bold.
 Concentrations exceeding only the residential assessment level are shaded yellow.
 Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Outer Long-Term Wells									
	MW-4	MW-7	MW-12	MW-14	MW-16	MW-18	MW-29	DUP-01 MW-29	MW-30	MW-31		
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L)												
1,2-Dichlorobenzene	0.600	0.600	<0.00055	<0.00055	0.0008J	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055
1,3-Dichlorobenzene	0.73	2.2	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058
1,4-Dichlorobenzene	0.075	0.075	<0.00054	<0.00054	0.002J	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054
1-Methylnaphthalene	1.7	5.1	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066
2,4-Dimethylphenol	0.49	1.5	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
2,4-Dinitrophenol	0.049	0.15	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
2-Methylnaphthalene	0.098	0.29	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
2-Methylphenol	1.2	3.7	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
3 & 4-Methylphenol	0.12	0.37	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
4-Nitrophenol	0.049	0.15	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
Acenaphthene	1.5	4.4	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Acenaphthylene	1.5	4.4	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Anthracene	7.3	22	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Benz(a)anthracene	0.0013	0.0028	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Benzo(a)pyrene	0.0002	0.0002	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(b)fluoranthene	0.0013	0.0028	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(g,h,i)perylene	0.73	2.2	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Benzo(k)fluoranthene	0.013	0.028	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
Bis(2-chloroethyl)ether	0.00083	0.0019	0.06	0.013	0.056	0.009	0.22	0.022	0.27	0.25	<0.00036	<0.00036
Bis(2-chloroisopropyl)ether	0.013	0.029	0.004	0.089	0.011	0.005	0.02	0.024	0.15	0.13	0.14	0.005
Bis(2-ethylhexyl)phthalate	0.006	0.006	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
Chrysene	0.13	0.28	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Dibenz(a,h)acridine	0.00076	0.0017	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Outer Long-Term Wells									
	MW-4	MW-7	MW-12	MW-14	MW-16	MW-18	MW-29	DUP-01 MW-29	MW-30	MW-31		
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L) (Continued)												
Dibenz(a,h)anthracene	0.0002	0.00028	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Diethyl phthalate	20	58	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Dimethyl phthalate	20	58	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
Di-n-butyl phthalate	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Fluoranthene	0.98	2.9	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Fluorene	0.98	2.9	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Indene	0.49	1.5	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Indeno(1,2,3-cd)pyrene	0.0013	0.0028	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Naphthalene	0.49	1.5	<0.00053	<0.00053	<0.00053	0.003	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Phenanthrene	0.73	2.2	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Phenol	7.3	22	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Pyrene	0.73	2.2	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Pyridine	0.024	0.073	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Quinoline	0.0003	0.00068	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061
Thiophenol	0.00024	0.00073	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088
Total SVOCs			0.064	0.102	0.070	0.017	0.240	0.046	0.420	0.380	0.140	0.005

(1)

The Tier 1 PCL for 4-methylphenol was used as the Tier 1 PCL for 3 & 4-methylphenol.

<

Less than.

E

Estimated value exceeds calibration curve.

GW

Protective concentration level for groundwater ingestion.

ING

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L

Milligram per liter.

ND

None detected.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Point-of-Compliance Wells									
	MW-5	MW-19	MW-20	MW-21	MW-22	MW-32	MW-33	MW-34	MW-35	RFI-12		
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L)												
1,2-Dichlorobenzene	0.600	0.600	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055
1,3-Dichlorobenzene	0.73	2.2	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058
1,4-Dichlorobenzene	0.075	0.075	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054
1-Methylnaphthalene	1.7	5.1	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066
2,4-Dimethylphenol	0.49	1.5	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
2,4-Dinitrophenol	0.049	0.15	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
2-Methylnaphthalene	0.098	0.29	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
2-Methylphenol	1.2	3.7	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
3 & 4-Methylphenol	0.12	0.37	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
4-Nitrophenol	0.049	0.15	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
Acenaphthene	1.5	4.4	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Acenaphthylene	1.5	4.4	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Anthracene	7.3	22	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Benz(a)anthracene	0.0013	0.0028	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Benzo(a)pyrene	0.0002	0.0002	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(b)fluoranthene	0.0013	0.0028	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(g,h,i)perylene	0.73	2.2	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Benzo(k)fluoranthene	0.013	0.028	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
Bis(2-chloroethyl)ether	0.00083	0.0019	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
Bis(2-chloroisopropyl)ether	0.013	0.029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bis(2-ethylhexyl)phthalate	0.006	0.006	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
Chrysene	0.13	0.28	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Dibenz(a,h)acridine	0.00076	0.0017	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042

Table 7. "A-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Point-of-Compliance Wells									
	MW-5	MW-19	MW-20	MW-21	MW-22	MW-32	MW-33	MW-34	MW-35	RFI-12		
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L) (Continued)												
Dibenz(a,h)anthracene	0.0002	0.00028	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Diethyl phthalate	20	58	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Dimethyl phthalate	20	58	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
Di-n-butyl phthalate	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Fluoranthene	0.98	2.9	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Fluorene	0.98	2.9	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Indene	0.49	1.5	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Indeno(1,2,3-cd)pyrene	0.0013	0.0028	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Naphthalene	0.49	1.5	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Phenanthrene	0.73	2.2	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Phenol	7.3	22	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Pyrene	0.73	2.2	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Pyridine	0.024	0.073	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Quinoline	0.0003	0.00068	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061
Thiophenol	0.00024	0.00073	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088
Total SVOCs			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND

(1)

The Tier 1 PCL for 4-methylphenol was used as the Tier 1 PCL for 3 & 4-methylphenol.

<

Less than.

E

Estimated value exceeds calibration curve.

GW

Protective concentration level for groundwater ingestion.

GW_{ING}

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

J

mg/L Milligram per liter.

mg/L

ND None detected.

ND

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 8.

"A-Zone" Metals Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Interior Long-Term Wells				
	MW-6	MW-10	MW-11	MW-15	DUP-02 MW-15	MW-17	
Metals (6020) (mg/L)							
Antimony	0.006	0.006	0.00284J	0.00195J	0.00145J	0.00162J	0.00184J
Arsenic	0.01	0.01	0.032	0.0755	0.00733	0.259	0.275
Barium	2	2	1.16	0.698	1.38	1.31	1.41
Beryllium	0.004	0.004	0.000119J	<0.000118	0.000137J	<0.000118	<0.000118
Cadmium	0.005	0.005	<0.000199	<0.0149	<0.0149	<0.000199	<0.000199
Chromium	0.1	0.1	0.00113J	0.00097J	0.000789J	0.000396J	0.000431J
Cobalt	1.5	4.4	0.0194	0.0112	0.0221	0.0104	0.0112
Cyanide ⁽¹⁾	0.2	0.2	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247
Lead	0.015	0.015	<0.000660	<0.000660	<0.000660	<0.000660	<0.000660
Manganese	1.1	10	8.52	4.34	12.2	5.21	5.53
Mercury ⁽¹⁾	0.002	0.002	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497
Nickel	0.49	1.5	0.00811	<0.0358	<0.0358	0.00329J	0.00348J
Selenium	0.05	0.05	0.00121J	0.000796J	0.000832J	0.00129J	0.00129J
Silver	0.12	0.37	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134
Vanadium	0.17	0.51	0.00206J	0.0019J	0.00284J	0.0016J	0.00169J
Zinc	7.3	22	0.0117	0.0172	0.00288J	0.00482J	0.00409J

<
^{GW} GW_{ING} Less than.

Protective concentration level for groundwater ingestion.

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L Milligram per liter.

⁽¹⁾ Cyanide and mercury were analyzed by USEPA Methods E335.2 and 7470A, respectively.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 8.

"A-Zone" Metals Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	Outer Long-Term Wells									
			MW-4	MW-7	MW-12	MW-14	MW-16	MW-18	MW-29	DUP-01 MW-29	MW-30	MW-31
Metals (6020) (mg/L) (continued)												
Antimony	0.006	0.006	0.00256J	0.00154J	<0.00100	0.00118J	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100
Arsenic	0.01	0.01	0.00247J	0.00213J	0.00267J	0.0181	0.00195J	0.0562	0.00233J	0.00209J	0.0022J	0.00339J
Barium	2	2	1.52	0.163	0.481	0.572	1.68	0.416	0.507	0.525	0.403	0.389
Beryllium	0.004	0.004	<0.000118	<0.000118	<0.000118	<0.000118	0.000886J	<0.000118	<0.000118	<0.000118	<0.000118	<0.000118
Cadmium	0.005	0.005	0.00363J	<0.000199	<0.000199	<0.0149	0.00195J	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199
Chromium	0.1	0.1	0.000424J	0.000437J	0.00846	0.00201J	0.000585J	0.000454J	0.000615J	0.000711J	0.000589J	0.000646J
Cobalt	1.5	4.4	0.0244	0.000295J	0.00108J	0.000512J	0.00984	0.000465J	0.00101J	0.0011J	0.00256J	0.00134J
Cyanide ⁽¹⁾	0.2	0.2	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247
Lead	0.015	0.015	<0.000660	<0.000660	<0.000660	0.000797J	<0.000660	<0.000660	<0.000660	<0.000660	<0.000660	<0.000660
Manganese	1.1	10	5.42	0.0223	0.332	2.03	3.36	3.57	0.697	0.751	1.86	1.32
Mercury ⁽¹⁾	0.002	0.002	<0.0000497	<0.0000497	<0.0000497	<0.0000497	0.000603	0.000116J	<0.0000497	<0.0000497	<0.0000497	<0.0000497
Nickel	0.49	1.5	0.0232	0.000647J	0.00103J	<0.0358	0.0375	0.000636J	0.00238J	0.00237J	0.00205J	0.001J
Selenium	0.05	0.05	<0.000264	<0.000264	<0.000264	<0.000264	<0.000264	<0.000264	0.000969J	0.00202J	<0.000264	<0.000264
Silver	0.12	0.37	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134
Vanadium	0.17	0.51	0.00325J	0.00414J	0.00151J	0.0019J	0.00163J	0.0015J	0.00121J	0.00115J	0.00252J	0.00164J
Zinc	7.3	22	0.00764J	0.0032J	0.00189J	0.0366	0.0162	0.00228J	0.00247J	0.00232J	0.00455J	0.00491J

<
^{GW}GW_{ING}

Less than.

Protective concentration level for groundwater ingestion.

J

Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L

Milligram per liter.

⁽¹⁾

Cyanide and mercury were analyzed by USEPA Methods E335.2 and 7470A, respectively.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

ARCADIS

Table 8.

"A-Zone" Metals Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Point-of-Compliance Wells											
	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	MW-5	MW-19	MW-20	MW-21	MW-22	MW-32	MW-33	MW-34	MW-35	RFI-12
Metals (6020) (mg/L) (continued)												
Antimony	0.006	0.006	<0.00100	<0.00100	<0.00100	<0.00100	<0.00100	<0.0500	<0.00100	<0.00100	<0.00100	<0.00100
Arsenic	0.01	0.01	0.00154J	0.0021J	0.00154J	0.00215J	0.00165J	<0.0478	<0.000955	0.00127J	<0.000955	0.00237J
Barium	2	2	0.346	0.122	0.076	0.244	0.278	0.643	0.205	0.137	0.331	0.185
Beryllium	0.004	0.004	<0.000118	<0.000118	<0.000118	<0.000118	<0.000118	<0.00118	<0.000118	<0.000118	<0.000118	<0.000118
Cadmium	0.005	0.005	<0.000199	<0.000199	<0.000199	<0.000199	<0.000199	0.056	<0.000199	<0.000199	<0.000199	<0.000199
Chromium	0.1	0.1	0.000516J	0.00227J	0.000614J	0.000575J	0.000606J	0.00485J	0.000592J	0.00128J	0.000564J	0.00089J
Cobalt	1.5	4.4	0.000772J	<0.000279	0.000928J	<0.000279	<0.000279	0.038J	0.000686J	<0.000279	0.00157J	<0.000279
Cyanide ⁽¹⁾	0.2	0.2	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247
Lead	0.015	0.015	<0.000660	<0.000660	<0.000660	<0.000660	<0.000660	0.0504	<0.000660	<0.000660	<0.000660	<0.000660
Manganese	1.1	10	0.434	0.00178J	2.06	0.00536	0.00292J	40.4	0.605	0.15	1.13	0.0478
Mercury ⁽¹⁾	0.002	0.002	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497
Nickel	0.49	1.5	0.0007J	0.00081J	0.000879J	<0.000339	0.000739J	0.0648J	0.000887J	0.00128J	0.00122J	0.000578J
Selenium	0.05	0.05	<0.000264	<0.000264	<0.000264	<0.000264	<0.000264	<0.00264	<0.000264	0.000341J	<0.000264	<0.000264
Silver	0.12	0.37	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134
Vanadium	0.17	0.51	0.00256J	0.00393J	0.00302J	0.00395J	0.00294J	0.00892J	0.00175J	0.0015J	0.00266J	0.00378J
Zinc	7.3	22	0.00727J	0.00264J	0.00632J	0.00277J	0.00568J	0.04J	0.00737J	0.0024J	0.00703J	0.00276J

<
GW GW_{ING}

Less than.

Protective concentration level for groundwater ingestion.

J

Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L

Milligram per liter.

⁽¹⁾

Cyanide and mercury were analyzed by USEPA Methods E335.2 and 7470A, respectively.

Detected concentrations are shown in bold.

Concentrations exceeding only the residential assessment level are shaded yellow.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 9.

"B-Zone" Volatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	MW-4D	MW-6D	MW-11D	MW-18D	MW-19D
Volatile Organic Compounds (VOCs) (8260B) (mg/L)							
1,1,1-Trichloroethane	0.200	0.200	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	0.005	0.005	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049
1,1-Dichloroethane	4.9	15	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087
1,1-Dichloroethene	0.007	0.007	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
1,2,3-Trichloropropane	0.00013	0.00029	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dibromoethane	0.000050	0.000050	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	0.005	0.005	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
1,2-Dichloroethene (total)	0.070 ⁽¹⁾	0.070 ⁽¹⁾	<0.00064	<0.00064	<0.00064	0.001J	<0.00064
1,2-Dichloropropane	0.005	0.005	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
1,4-Dioxane	0.083	0.19	<0.058	<0.058	<0.058	<0.058	<0.058
2-Butanone	15	44	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
Benzene	0.005	0.005	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Carbon disulfide	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Chlorobenzene	0.100	0.100	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Chloroethane	9.8	29	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065
Chloroform	0.24	0.730	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Ethylbenzene	0.700	0.700	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Methyl tert-butyl ether	0.24	0.730	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	0.100	0.100	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Tetrachloroethylene	0.005	0.005	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Toluene	1	1	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Trichloroethene	0.005	0.005	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Vinyl chloride	0.002	0.002	<0.00062	<0.00062	<0.00062	0.003	<0.00062
m,p-Xylene	10	10	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047
o-Xylene	10	10	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Xylenes, Total	10	10	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Total VOCs			ND	ND	ND	0.004	ND

(1)

The Tier 1 PCL for cis-1,2-dichloroethene was used as the Tier 1 PCL for 1,2-dichloroethene (total).

<

^{GW} GW_{ING}

Protective concentration level for groundwater ingestion.

J

Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

ND

None detected.

mg/L

Milligram per liter.

Detected concentrations are shown in bold.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

Table 10.

"B-Zone" Semivolatile Organic Compound Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	MW-4D	MW-6D	MW-11D	MW-18D	MW-19D
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L)							
1,2-Dichlorobenzene	0.600	0.600	<0.00055	<0.00055	<0.00055	<0.00055	<0.00055
1,3-Dichlorobenzene	0.73	2.2	<0.00058	<0.00058	<0.00058	<0.00058	<0.00058
1,4-Dichlorobenzene	0.075	0.075	<0.00054	<0.00054	<0.00054	<0.00054	<0.00054
1-Methylnaphthalene	1.7	5.1	<0.00066	<0.00066	<0.00066	<0.00066	<0.00066
2,4-Dimethylphenol	0.49	1.5	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
2,4-Dinitrophenol	0.049	0.15	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
2-Methylnaphthalene	0.098	0.29	<0.0007	<0.0007	<0.0007	<0.0007	<0.0007
2-Methylphenol	1.2	3.7	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
3 & 4-Methylphenol	0.12	0.37	<0.00033	<0.00033	<0.00033	<0.00033	<0.00033
4-Nitrophenol	0.049	0.15	<0.00035	<0.00035	<0.00035	<0.00035	<0.00035
Acenaphthene	1.5	4.4	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Acenaphthylene	1.5	4.4	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Anthracene	7.3	22	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Benz(a)anthracene	0.0013	0.0028	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Benzo(a)pyrene	0.0002	0.0002	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(b)fluoranthene	0.0013	0.0028	<0.00041	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(g,h,i)perylene	0.73	2.2	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Benzo(k)fluoranthene	0.013	0.028	<0.00051	<0.00051	<0.00051	<0.00051	<0.00051
Bis(2-chloroethyl)ether	0.00083	0.0019	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
Bis(2-chloroisopropyl)ether	0.013	0.029	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Bis(2-ethylhexyl)phthalate	0.006	0.006	<0.00062	<0.00062	<0.00062	<0.00062	0.007
Chrysene	0.13	0.28	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Dibenz(a,h)acridine	0.00076	0.0017	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Dibenz(a,h)anthracene	0.0002	0.00028	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Diethyl phthalate	20	58	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
Dimethyl phthalate	20	58	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
Di-n-butyl phthalate	2.4	7.3	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Fluoranthene	0.98	2.9	<0.00048	<0.00048	<0.00048	<0.00048	<0.00048
Fluorene	0.98	2.9	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Indene	0.49	1.5	<0.012	<0.012	<0.012	<0.012	<0.012
Indeno(1,2,3-cd)pyrene	0.0013	0.0028	<0.00046	<0.00046	<0.00046	<0.00046	<0.00046
Naphthalene	0.49	1.5	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Phenanthrene	0.73	2.2	<0.00043	<0.00043	<0.00043	<0.00043	<0.00043
Phenol	7.3	22	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
Pyrene	0.73	2.2	<0.00045	<0.00045	<0.00045	<0.00045	<0.00045
Pyridine	0.024	0.073	<0.0015	<0.0015	<0.0015	<0.0015	<0.0015
Quinoline	0.0003	0.00068	<0.00061	<0.00061	<0.00061	<0.00061	<0.00061
Thiophenol	0.00024	0.00073	<0.0088	<0.0088	<0.0088	<0.0088	<0.0088
Total SVOCs			ND	ND	ND	ND	0.007

(1)

The Tier 1 PCL for 4-methylphenol was used as the Tier 1 PCL for 3 & 4-methylphenol.

<

Less than.

GW GW_{ING}

Protective concentration level for groundwater ingestion.

ND

None detected.

mg/L

Milligram per liter.

Detected concentrations are shown in bold.

Concentrations exceeding both the residential assessment level and the commercial/industrial PCL are shaded gray.

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Table 11. "B-Zone" Metals Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/ Method/Unit	Tier 1 ^{GW} GW _{ING} (Residential) (mg/L)	Tier 1 ^{GW} GW _{ING} (Commercial/Industrial) (mg/L)	MW-4D	MW-6D	MW-11D	MW-18D	MW-19D
Metals (6020) (mg/L)							
Antimony	0.006	0.006	0.00132J	0.00213J	0.00174J	<0.00100	<0.00100
Arsenic	0.01	0.01	0.00391J	0.00291J	0.00156J	0.00196J	0.00793
Barium	2	2	0.378	0.561	0.548	0.786	0.606
Beryllium	0.004	0.004	<0.000118	<0.000118	0.000224J	<0.000118	0.000125J
Cadmium	0.005	0.005	<0.000199	<0.000199	<0.0149	<0.000199	<0.000199
Chromium	0.1	0.1	0.00198J	0.000985J	0.000568J	0.000827J	0.0125
Cobalt	1.5	4.4	0.000844J	0.000353J	0.000427J	0.000304J	0.000834J
Cyanide ⁽¹⁾	0.2	0.2	<0.00247	<0.00247	<0.00247	<0.00247	<0.00247
Lead	0.015	0.015	<0.000660	<0.000660	<0.000660	<0.000660	<0.000660
Manganese	1.1	10	<0.000243	0.151	0.168	0.189	0.313
Mercury ⁽¹⁾	0.002	0.002	<0.0000497	<0.0000497	<0.0000497	<0.0000497	<0.0000497
Nickel	0.49	1.5	0.00135J	0.000368J	<0.0358	<0.000339	0.00223J
Selenium	0.05	0.05	<0.000264	<0.000264	<0.000264	<0.000264	<0.000264
Silver	0.12	0.37	<0.000134	<0.000134	<0.000134	<0.000134	<0.000134
Vanadium	0.17	0.51	0.00184J	0.0022J	0.00194J	0.00207J	0.000301J
Zinc	7.3	22	0.00403J	0.00294J	0.00389J	0.00339J	0.00426J

< Less than.
^{GW} GW_{ING} Protective concentration level for groundwater ingestion.

J Estimated value between Sample Quantitation Limit and Method Quantitation Limit.
mg/L Milligram per liter.

⁽¹⁾ Cyanide and mercury were analyzed by USEPA Methods E335.2 and 7470A, respectively.
Detected concentrations are shown in bold.

Table 12.

Quality Assurance/Quality Control Volatile Organic Compound Analytical Data,
 Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007
 Sampling Event), Port Neches Performance Products Facility, Huntsman
 Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Field Blank-01	Field Blank-02	Rinsate Blank-01	Rinsate Blank-02	Trip Blank-01	Trip Blank-02
Volatile Organic Compounds (VOCs) (8260B) (mg/L)						
1,1,1-Trichloroethane	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049
1,1-Dichloroethane	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087
1,1-Dichloroethene	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
1,2,3-Trichloropropane	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dibromoethane	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
1,2-Dichloroethene (total)	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064
1,2-Dichloropropane	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
1,4-Dioxane	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058
2-Butanone	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
Benzene	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Carbon disulfide	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Chlorobenzene	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Chloroethane	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065
Chloroform	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Ethylbenzene	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Methyl tert-butyl ether	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Tetrachloroethene	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Toluene	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Trichloroethene	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Vinyl chloride	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
m,p-Xylene	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047
o-Xylene	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Xylenes, Total	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Total VOCs	ND	ND	ND	ND	ND	ND

<

Less than.

ND

None detected.

mg/L

Milligram per liter.

Table 12.

Quality Assurance/Quality Control Volatile Organic Compound Analytical Data,
 Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007
 Sampling Event), Port Neches Performance Products Facility, Huntsman
 Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Trip Blank-03	Trip Blank-04	Trip Blank-05	Trip Blank-06	Trip Blank-07	Trip Blank-08
Volatile Organic Compounds (VOCs) (8260B) (mg/L) (continued)						
1,1,1-Trichloroethane	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053	<0.00053
1,1,2-Trichloroethane	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049	<0.00049
1,1-Dichloroethane	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087
1,1-Dichloroethene	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076	<0.00076
1,2,3-Trichloropropane	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dibromoethane	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036	<0.00036
1,2-Dichloroethane	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039	<0.00039
1,2-Dichloroethene (total)	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064	<0.00064
1,2-Dichloropropane	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
1,4-Dioxane	<0.058	<0.058	<0.058	<0.058	<0.058	<0.058
2-Butanone	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047	<0.0047
Benzene	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Carbon disulfide	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042	<0.00042
Chlorobenzene	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Chloroethane	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065	<0.00065
Chloroform	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Ethylbenzene	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031	<0.00031
Methyl tert-butyl ether	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
Styrene	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017	<0.00017
Tetrachloroethene	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068	<0.00068
Toluene	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028	<0.00028
Trichloroethene	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044	<0.00044
Vinyl chloride	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062	<0.00062
m,p-Xylene	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047	<0.00047
o-Xylene	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Xylenes, Total	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018	<0.00018
Total VOCs	ND	ND	ND	ND	ND	ND

< Less than.
 ND None detected.
 mg/L Milligram per liter.

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Table 13.

Quality Assurance/Quality Control Semivolatile Organic Compound Analytical Data,
Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007
Sampling Event), Port Neches Performance Products Facility, Huntsman
Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Field Blank-01	Field Blank-02	Rinsate Blank-01	Rinsate Blank-02
Semivolatile Organic Compounds (SVOCs) (8270C) (mg/L)				
1,2-Dichlorobenzene	<0.00055	<0.00055	<0.00055	<0.00055
1,3-Dichlorobenzene	<0.00058	<0.00058	<0.00058	<0.00058
1,4-Dichlorobenzene	<0.00054	<0.00054	<0.00054	<0.00054
1-Methylnaphthalene	<0.00066	<0.00066	<0.00066	<0.00066
2,4-Dimethylphenol	<0.00033	<0.00033	<0.00033	<0.00033
2,4-Dinitrophenol	<0.00051	<0.00051	<0.00051	<0.00051
2-Methylnaphthalene	<0.0007	<0.0007	<0.0007	<0.0007
2-Methylphenol	<0.00035	<0.00035	<0.00035	<0.00035
3 & 4-Methylphenol	<0.00033	<0.00033	<0.00033	<0.00033
4-Nitrophenol	<0.00035	<0.00035	<0.00035	<0.00035
Acenaphthene	<0.00045	<0.00045	<0.00045	<0.00045
Acenaphthylene	<0.00046	<0.00046	<0.00046	<0.00046
Anthracene	<0.00044	<0.00044	<0.00044	<0.00044
Benzo(a)anthracene	<0.00042	<0.00042	<0.00042	<0.00042
Benzo(a)pyrene	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(b)fluoranthene	<0.00041	<0.00041	<0.00041	<0.00041
Benzo(g,h,i)perylene	<0.00048	<0.00048	<0.00048	<0.00048
Benzo(k)fluoranthene	<0.00051	<0.00051	<0.00051	<0.00051
Bis(2-chloroethyl)ether	<0.00036	<0.00036	<0.00036	0.013
Bis(2-chloroisopropyl)ether	<0.0005	<0.0005	<0.0005	0.08
Bis(2-ethylhexyl)phthalate	<0.00062	<0.00062	<0.00062	<0.00062
Chrysene	<0.00043	<0.00043	<0.00043	<0.00043
Dibenz(a,h)acridine	<0.00042	<0.00042	<0.00042	<0.00042
Dibenz(a,h)anthracene	<0.00044	<0.00044	<0.00044	<0.00044
Diethyl phthalate	0.0004J	0.001J	0.0009J	0.0006J
Dimethyl phthalate	<0.00079	<0.00079	<0.00079	<0.00079
Di-n-butyl phthalate	<0.00042	0.003	0.002J	0.002J
Fluoranthene	<0.00048	<0.00048	<0.00048	<0.00048
Fluorene	<0.00044	<0.00044	<0.00044	<0.00044
Indene	<0.012	<0.012	<0.012	<0.012
Indeno(1,2,3-cd)pyrene	<0.00046	<0.00046	<0.00046	<0.00046
Naphthalene	<0.00053	<0.00053	<0.00053	<0.00053
Phenanthrene	<0.00043	<0.00043	<0.00043	<0.00043
Phenol	<0.00053	<0.00053	<0.00053	<0.00053
Pyrene	<0.00045	<0.00045	<0.00045	<0.00045
Pyridine	<0.0015	<0.0015	<0.0015	<0.0015
Quinoline	<0.00061	<0.00061	<0.00061	<0.00061
Thiophenol	<0.0088	<0.0088	<0.0088	<0.0088
Total SVOCs	0.0004	0.004	0.0029	0.0956

<

Less than.

J

Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L

Milligram per liter.

Detected concentrations are shown in bold.

Table 14.

Quality Assurance/Quality Control Metals Analytical Data, Semiannual 2007 Groundwater Corrective Action Monitoring Report (June 2007 Sampling Event), Port Neches Performance Products Facility, Huntsman Petrochemical Corporation, Port Neches, Texas.

Parameters/Method/Unit	Field Blank-01	Field Blank-02	Rinsate Blank-01	Rinsate Blank-02
<u>Metals (6020) (mg/L)</u>				
Antimony	<0.00100	0.00125J	<0.00100	0.0012J
Arsenic	<0.000955	0.00123J	<0.000955	0.00117J
Barium	<0.00100	<0.00100	<0.00100	0.00181J
Beryllium	<0.000118	<0.000118	<0.000118	<0.000118
Cadmium	<0.000199	<0.0149	<0.000199	<0.0149
Chromium	0.000764J	0.000409J	0.000456J	0.000511J
Cobalt	<0.000279	<0.000279	<0.000279	<0.000279
Cyanide ⁽¹⁾	<0.00247	<0.00247	<0.00247	<0.00247
Lead	<0.000660	<0.000660	<0.000660	<0.000660
Manganese	0.000536J	0.00063J	0.00238J	0.00355J
Mercury ⁽¹⁾	<0.0000497	<0.0000497	<0.0000497	<0.0000497
Nickel	<0.000339	<0.0358	<0.000339	<0.0358
Selenium	<0.000264	<0.000264	<0.000264	<0.000264
Silver	<0.000134	<0.000134	<0.000134	<0.000134
Vanadium	<0.000223	0.00119J	0.00136J	0.00137J
Zinc	0.0013J	0.00223J	0.00585J	0.00262J

<

Less than.

J

Estimated value between Sample Quantitation Limit and Method Quantitation Limit.

mg/L

Milligram per liter.

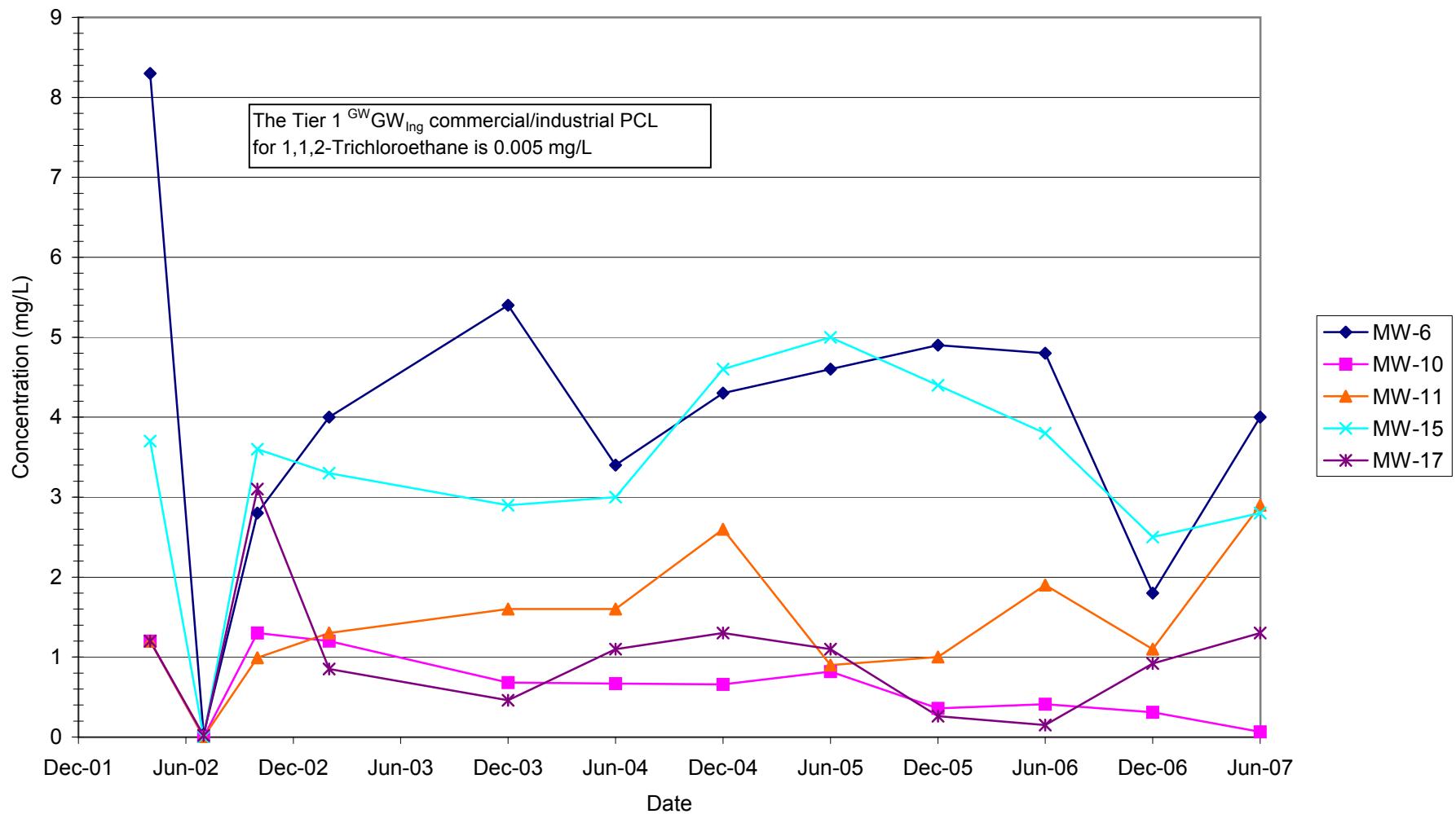
(1)

Cyanide and mercury were analyzed by USEPA Methods E335.2 and 7470A, respectively.

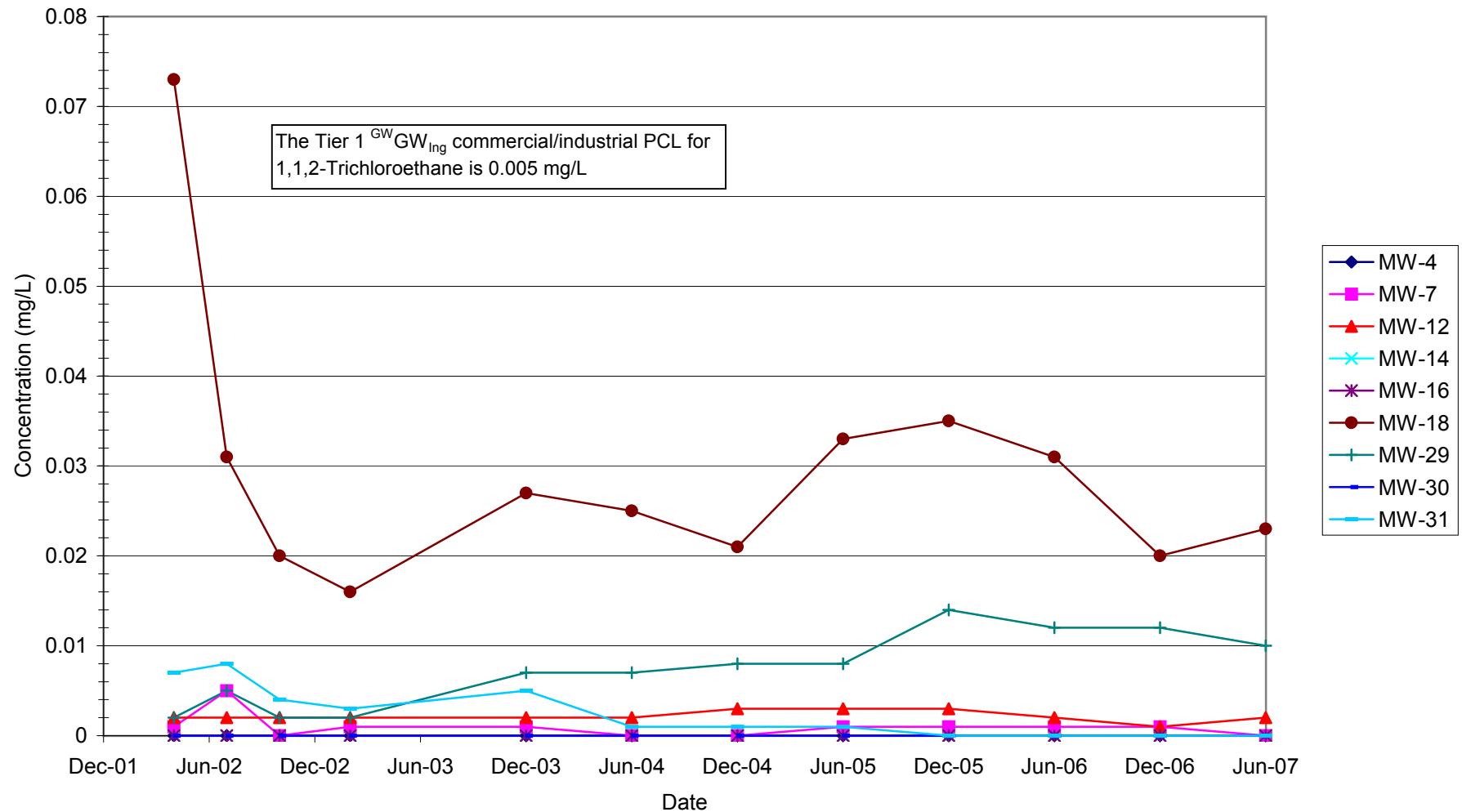
Detected concentrations are shown in bold.

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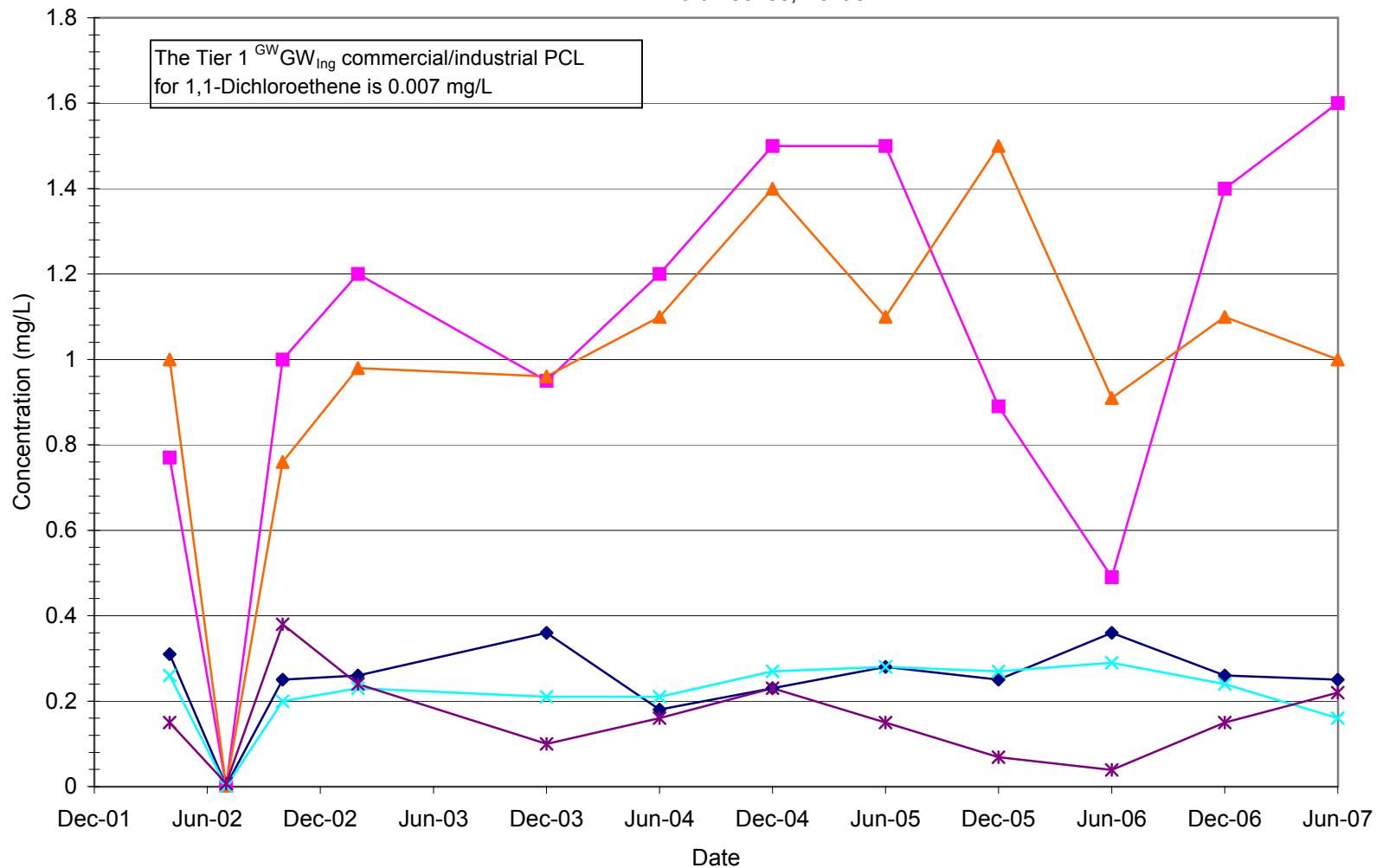
Time vs 1,1,2-Trichloroethane
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



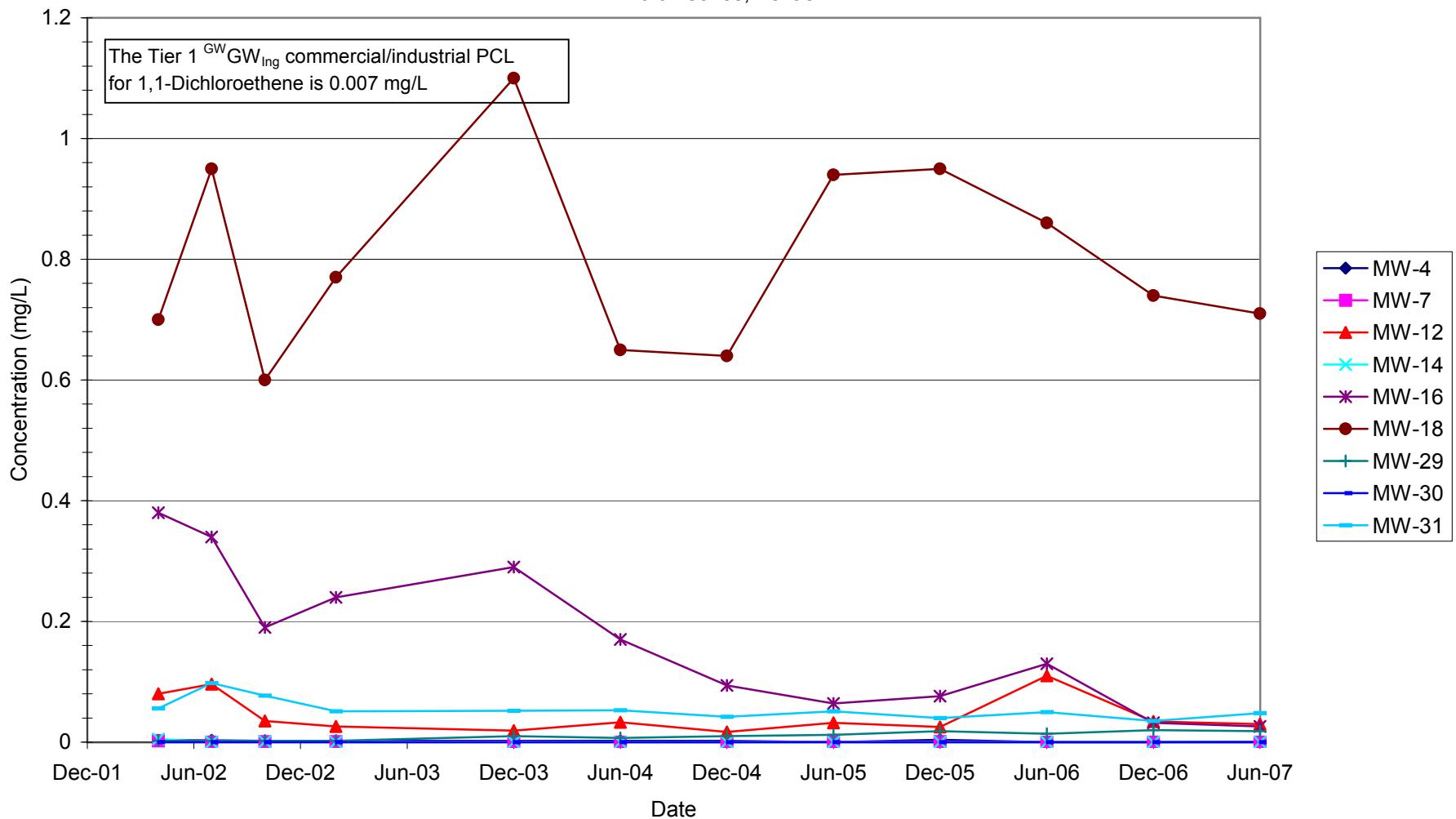
Time vs 1,1,2-Trichloroethane
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



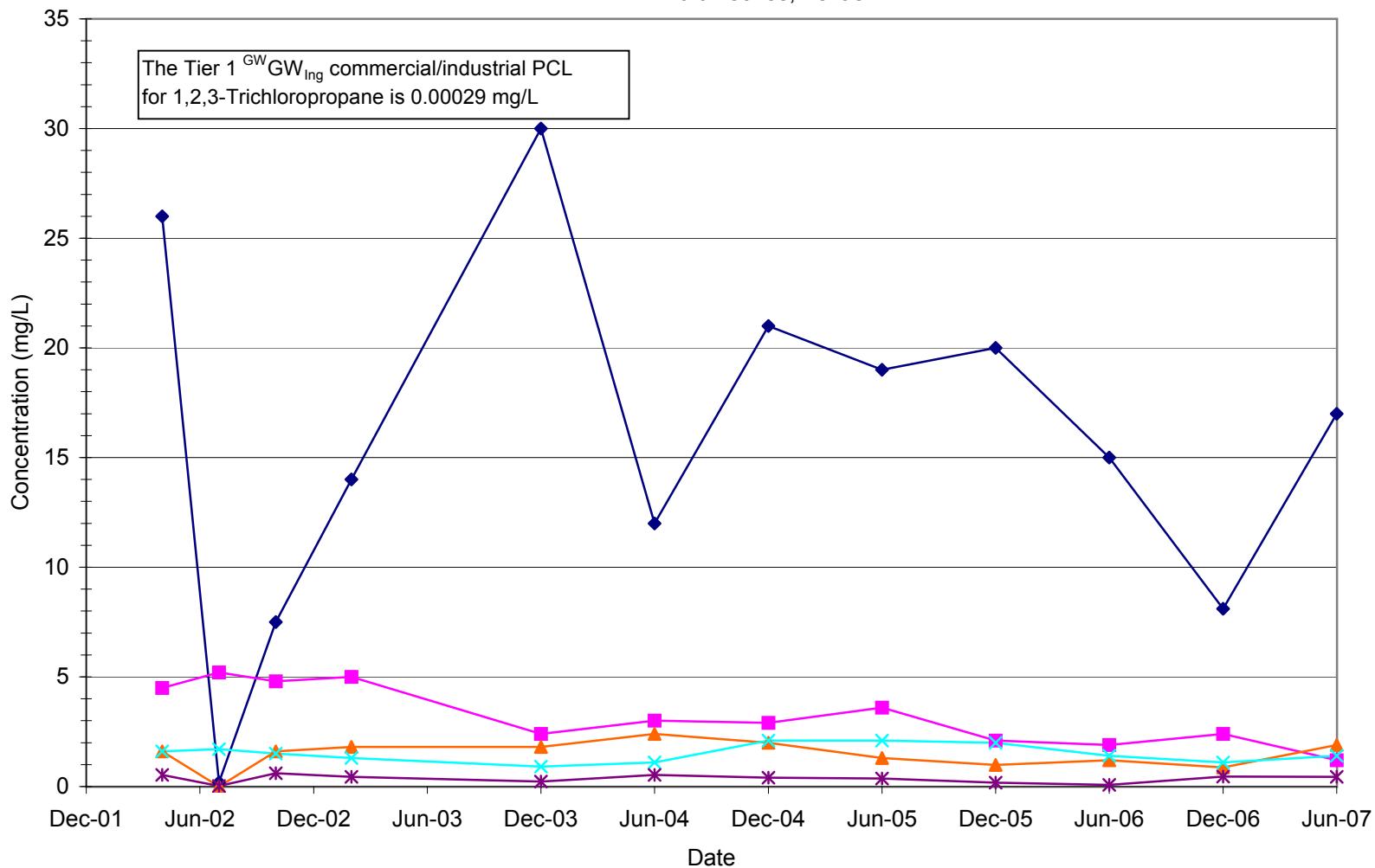
Time vs 1,1-Dichloroethene
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



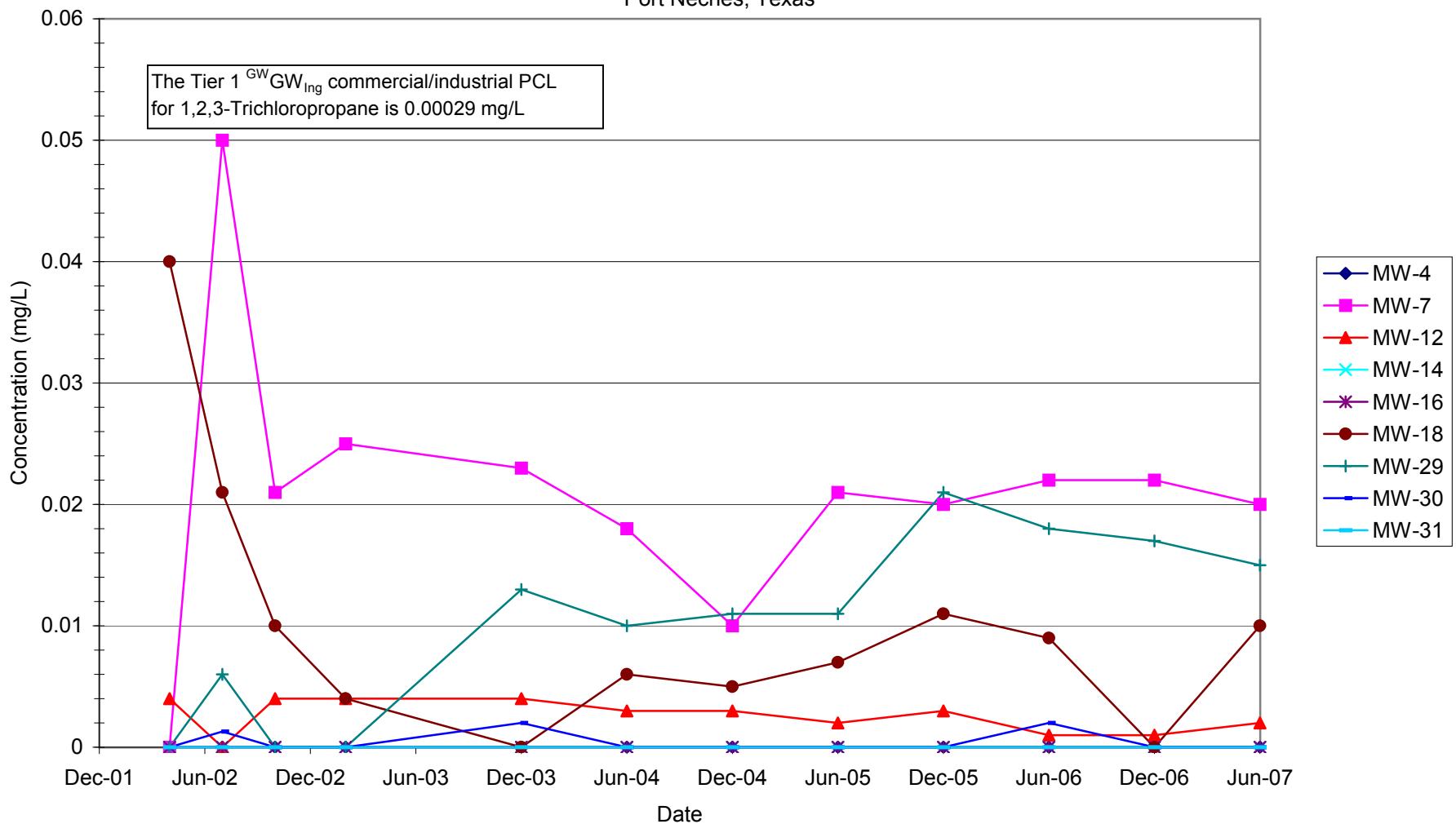
Time vs 1,1-Dichloroethene
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



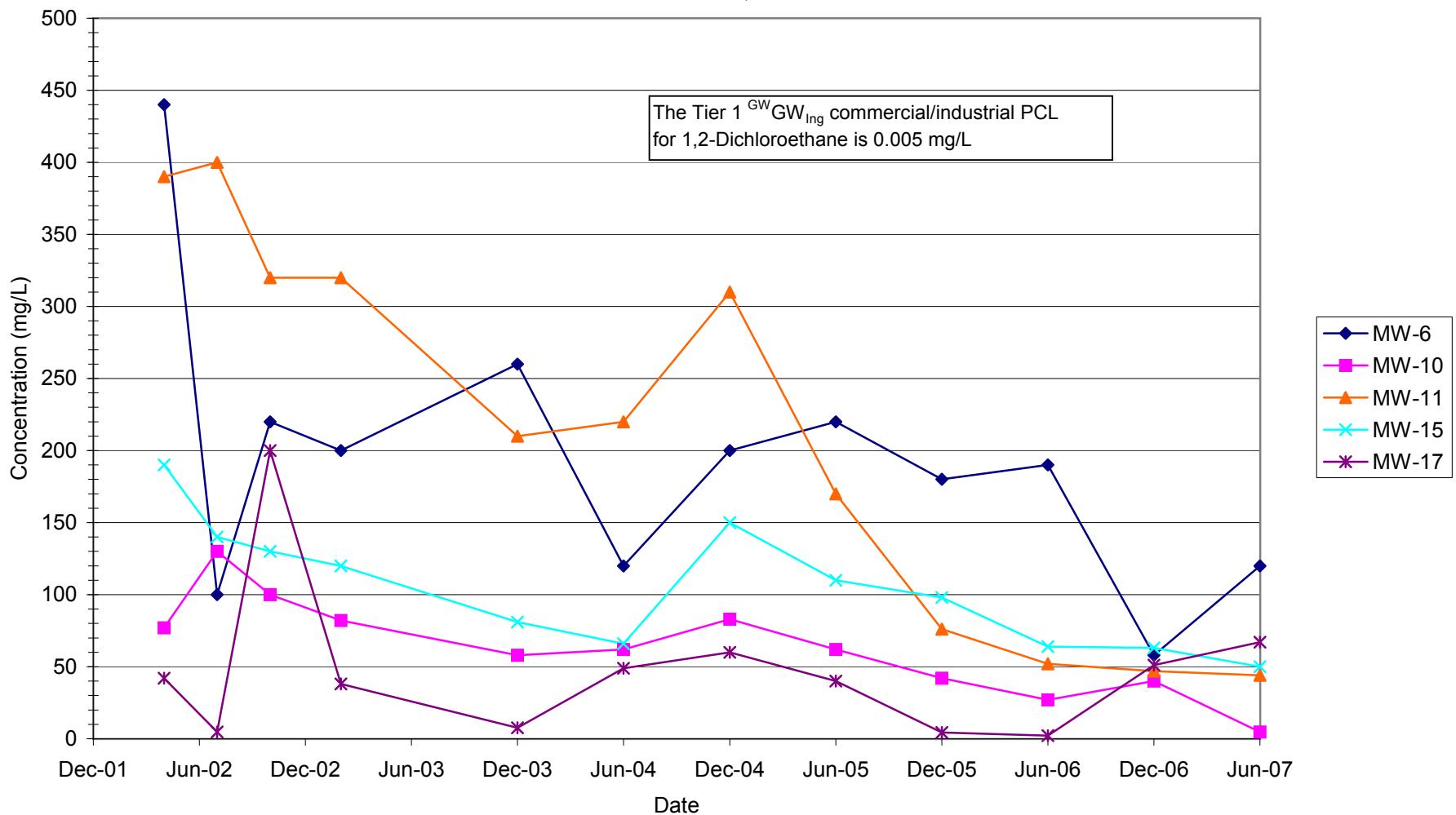
Time vs 1,2,3-Trichloropropane
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



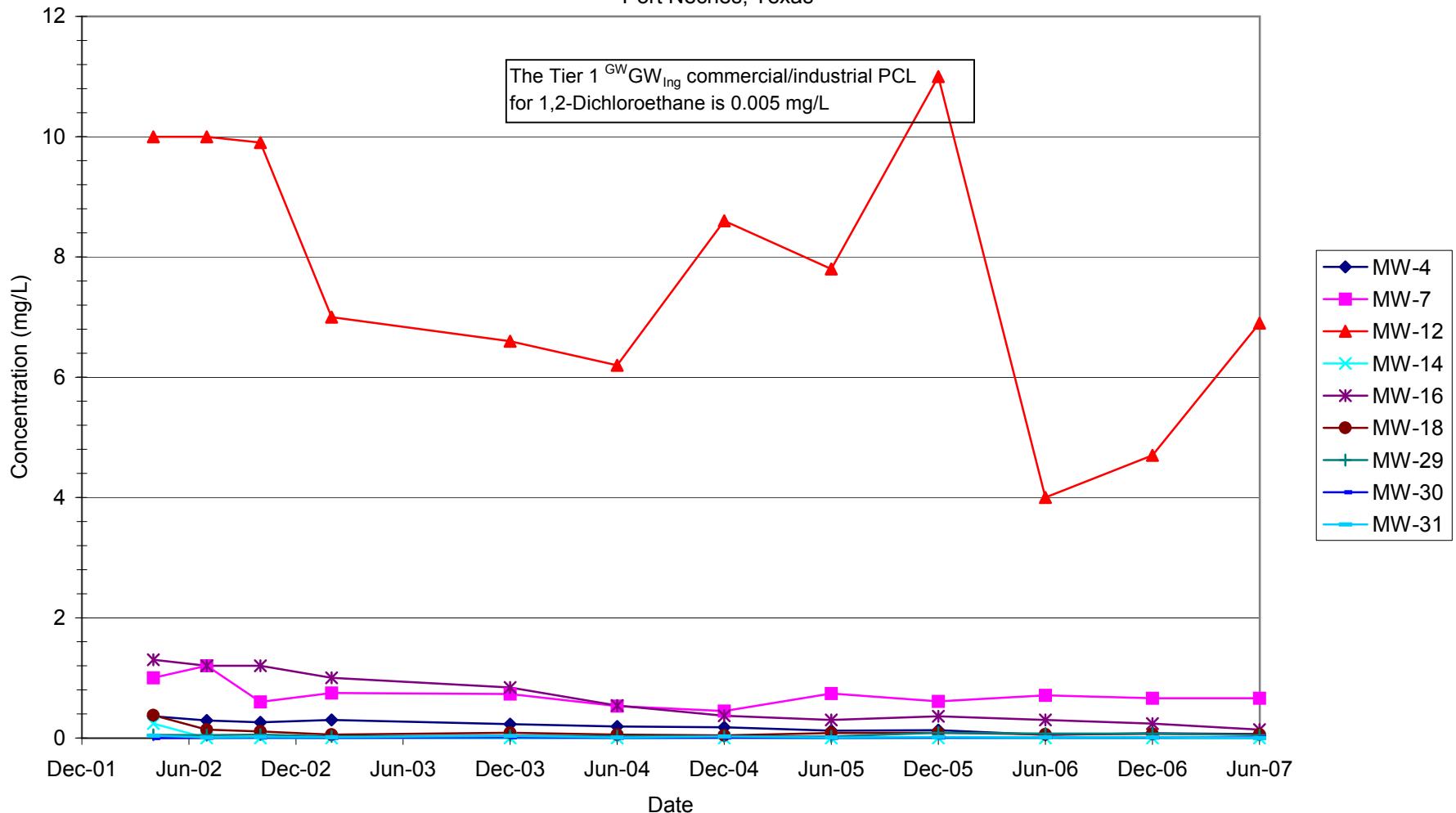
Time vs 1,2,3-Trichloropropane
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



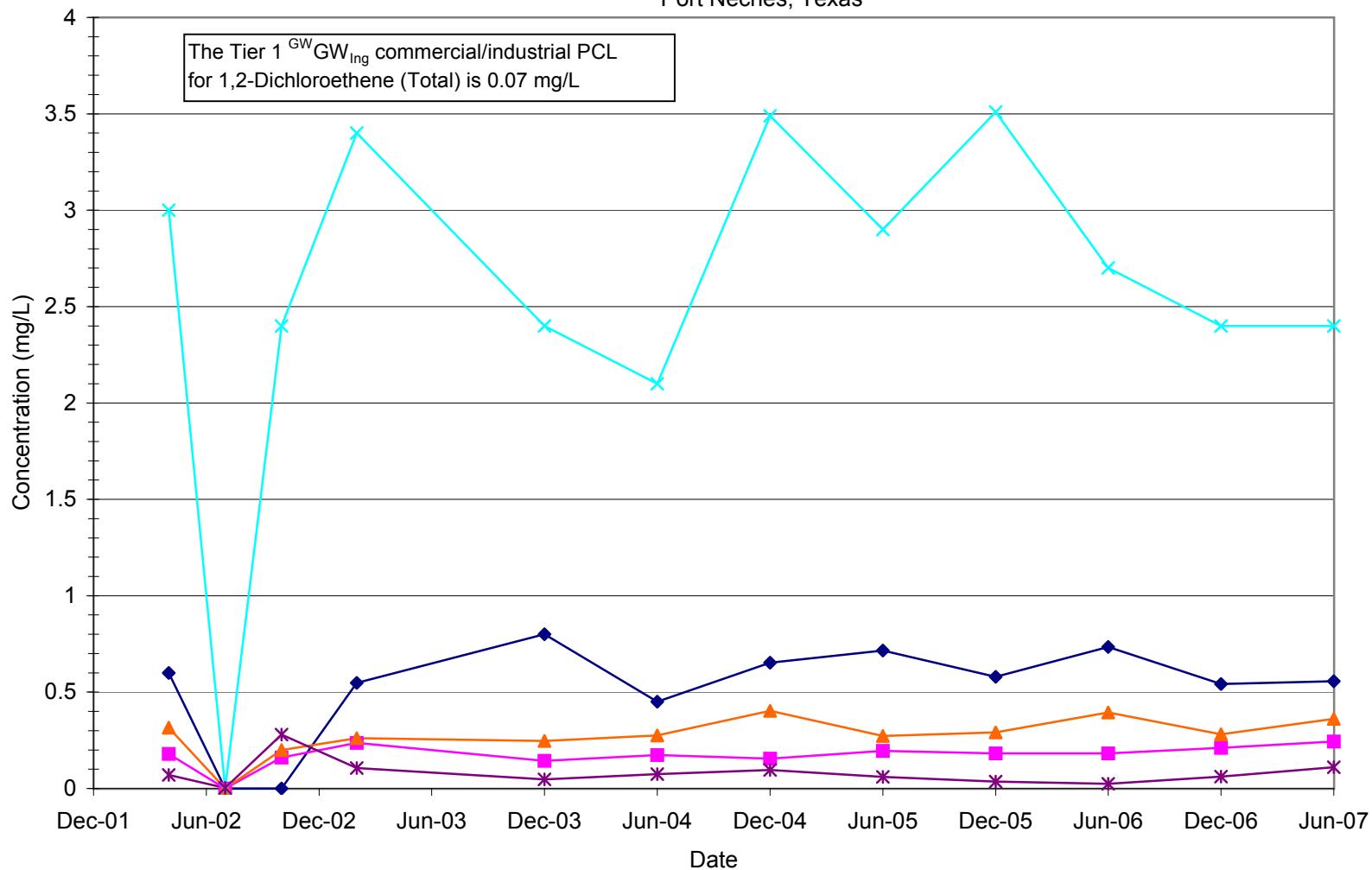
Time vs 1,2-Dichloroethane
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



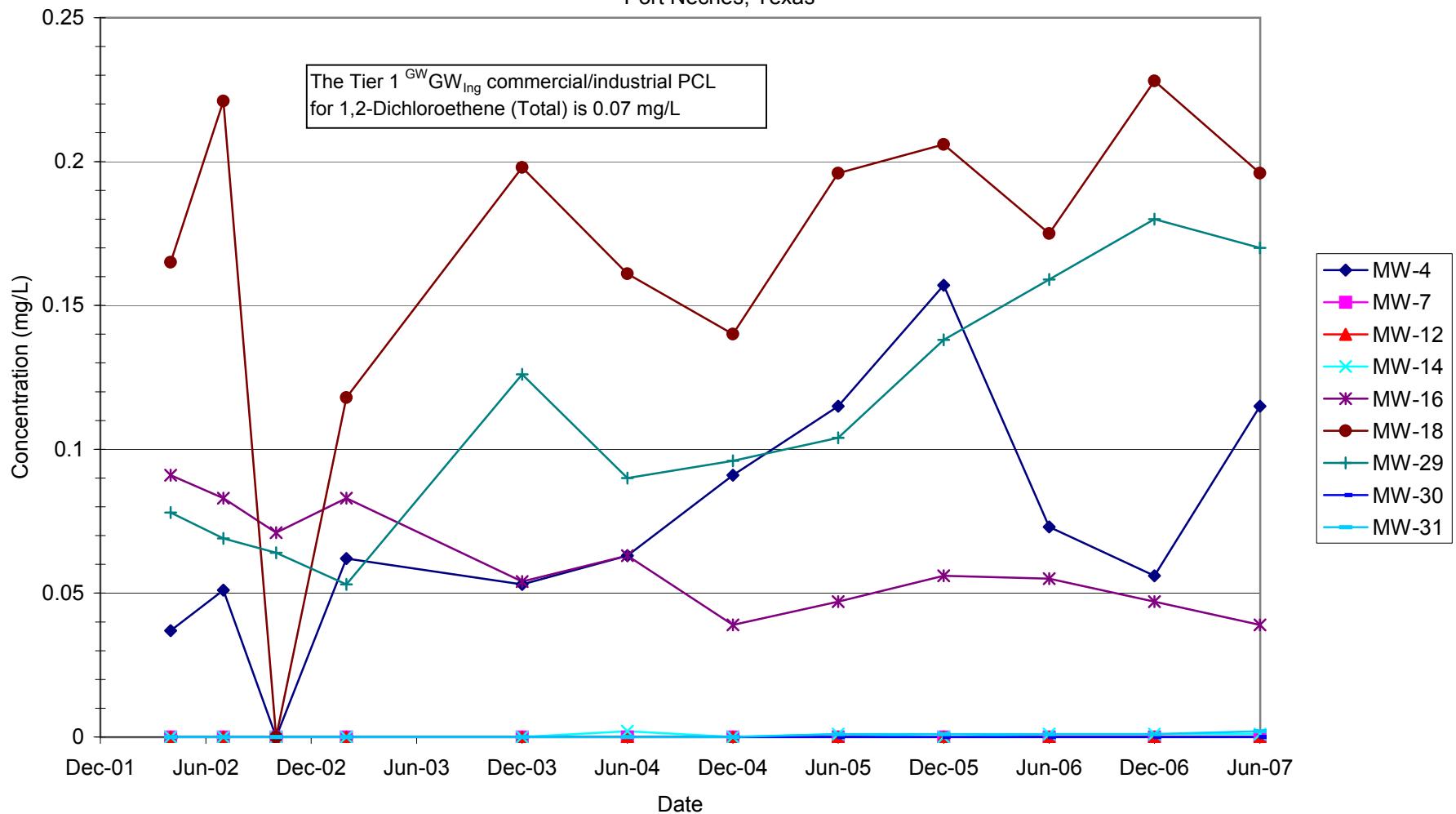
Time vs 1,2-Dichloroethane
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



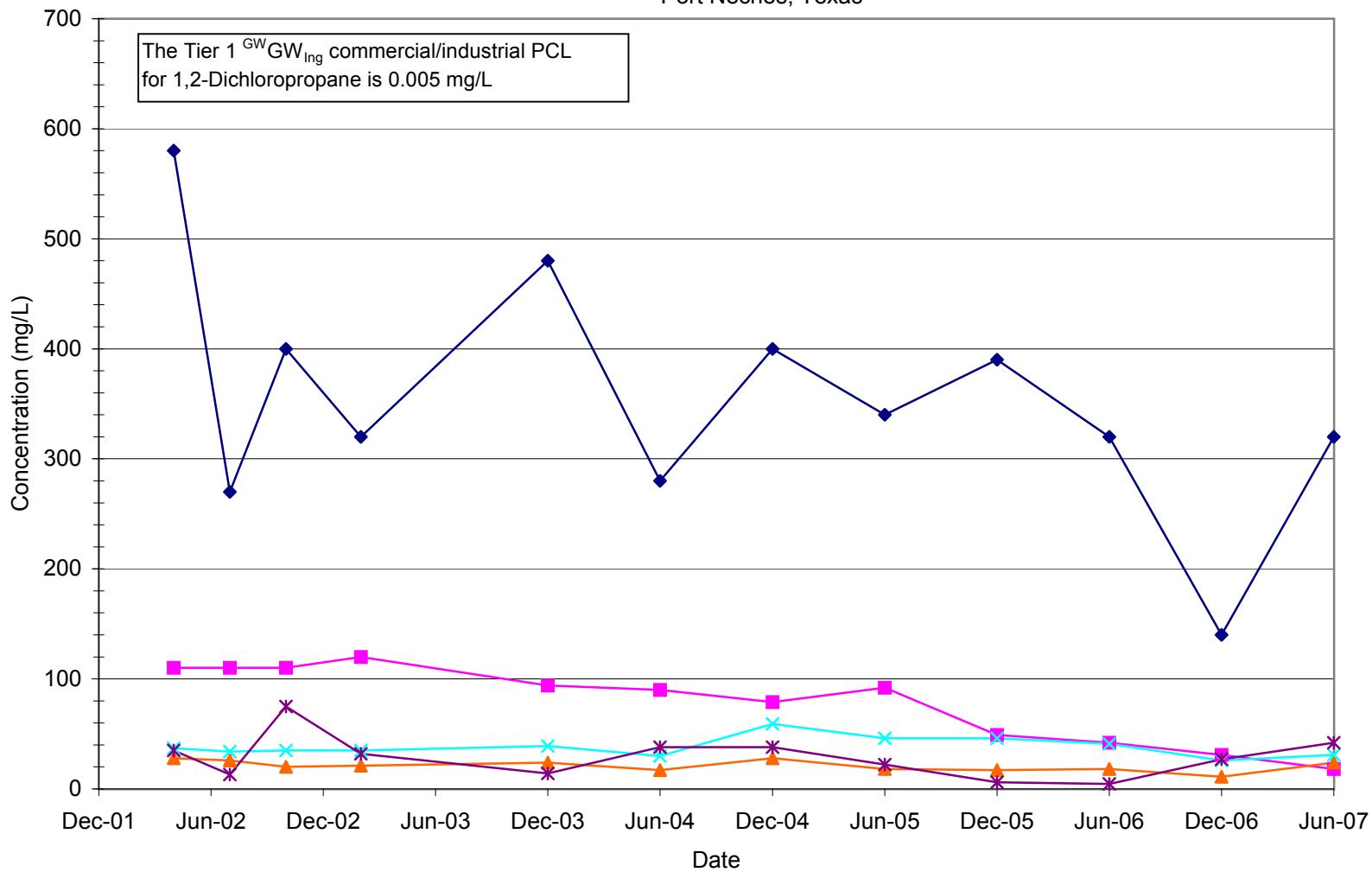
Time vs 1,2-Dichloroethene (Total)
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



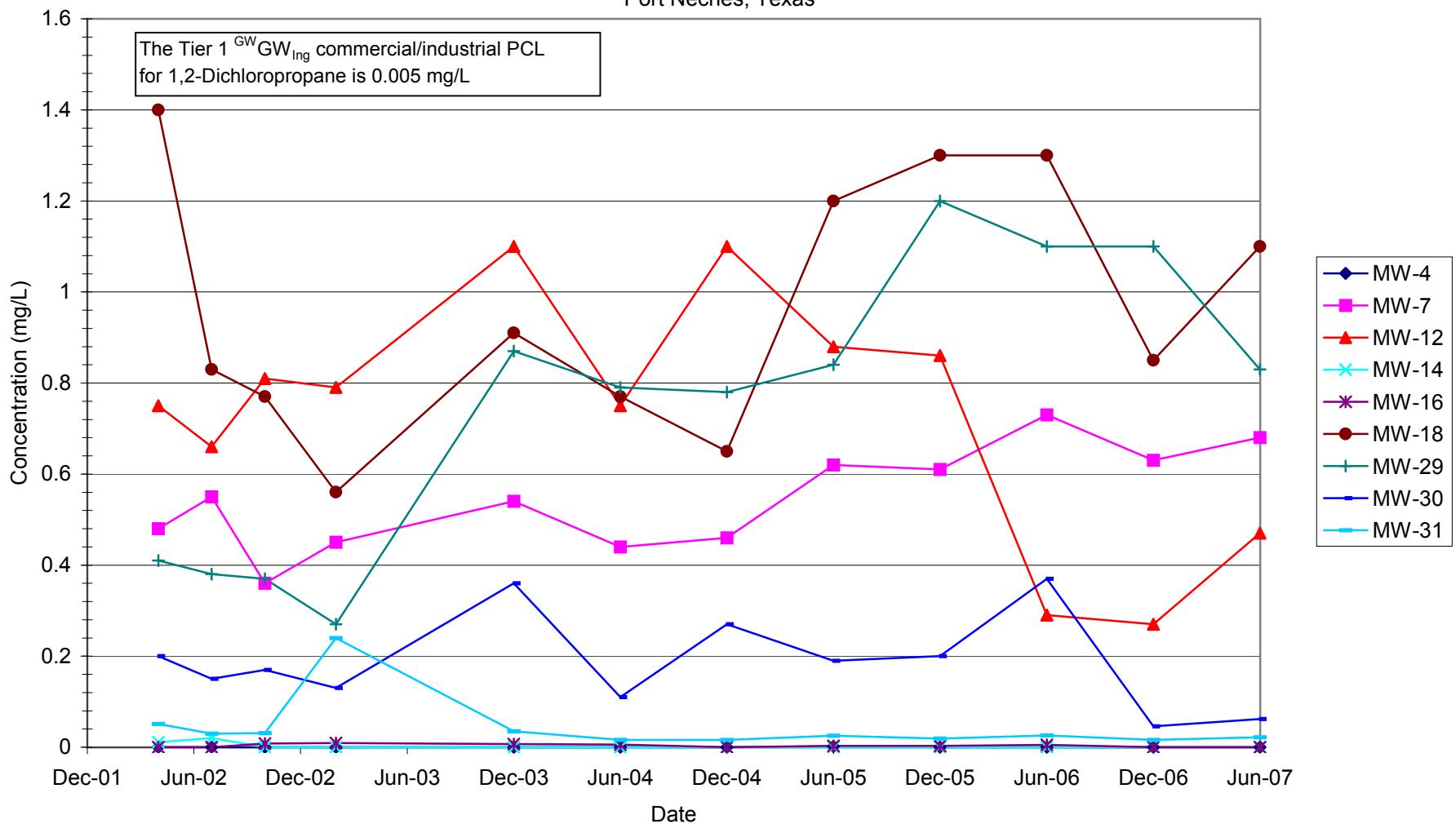
Time vs 1,2-Dichloroethene (Total)
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



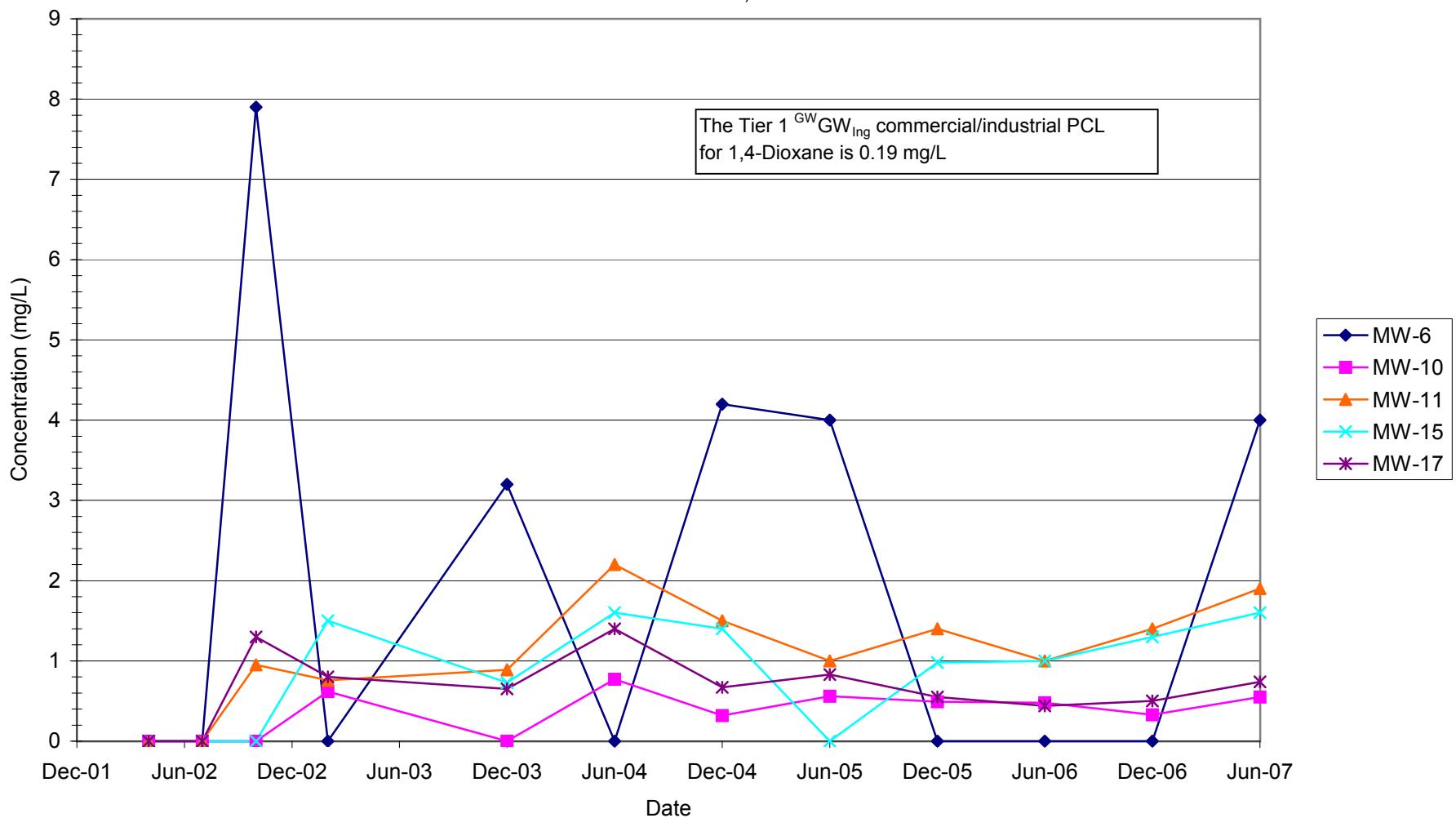
Time vs 1,2-Dichloropropane
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



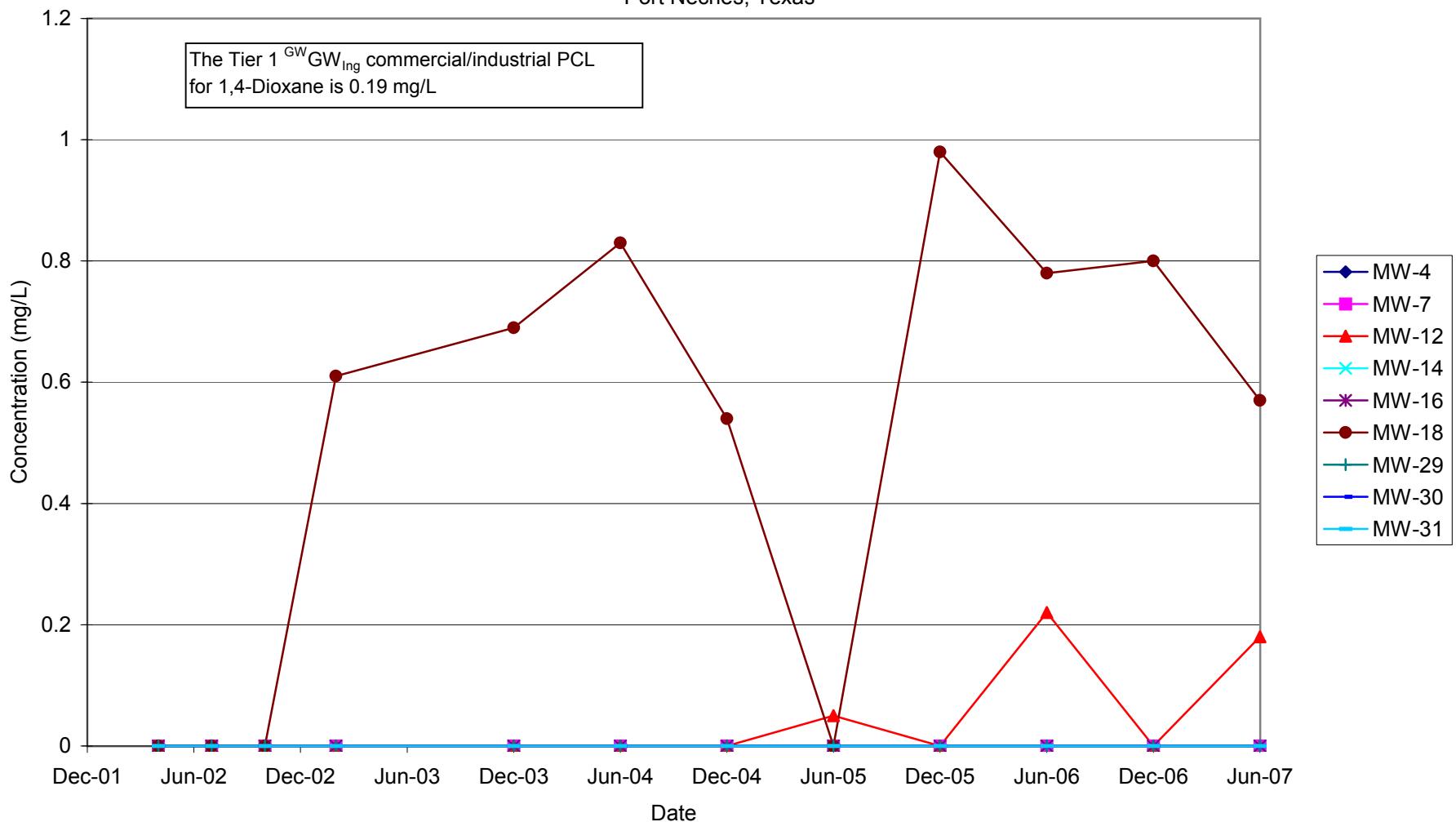
Time vs 1,2-Dichloropropane
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



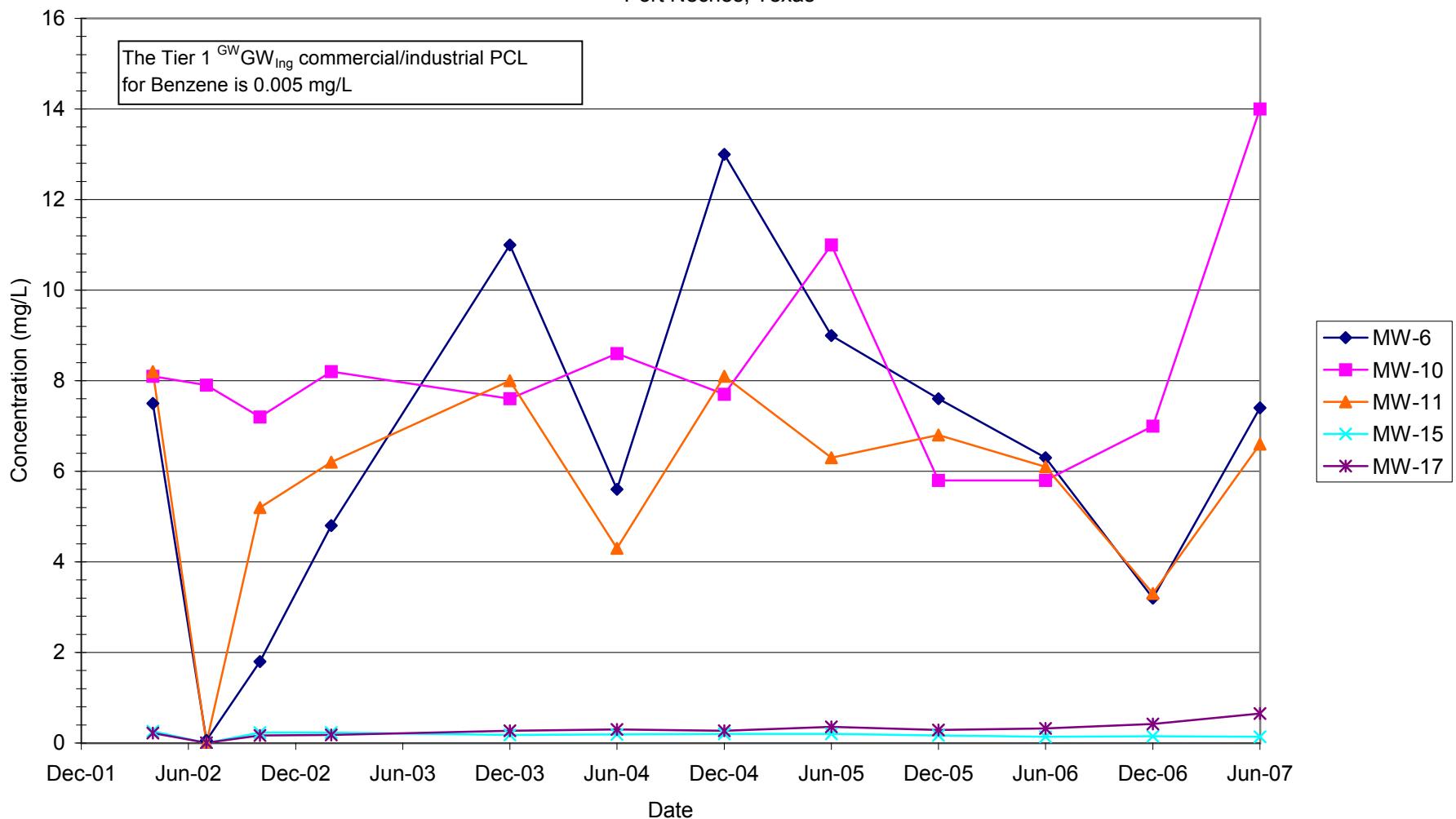
Time vs 1,4-Dioxane
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



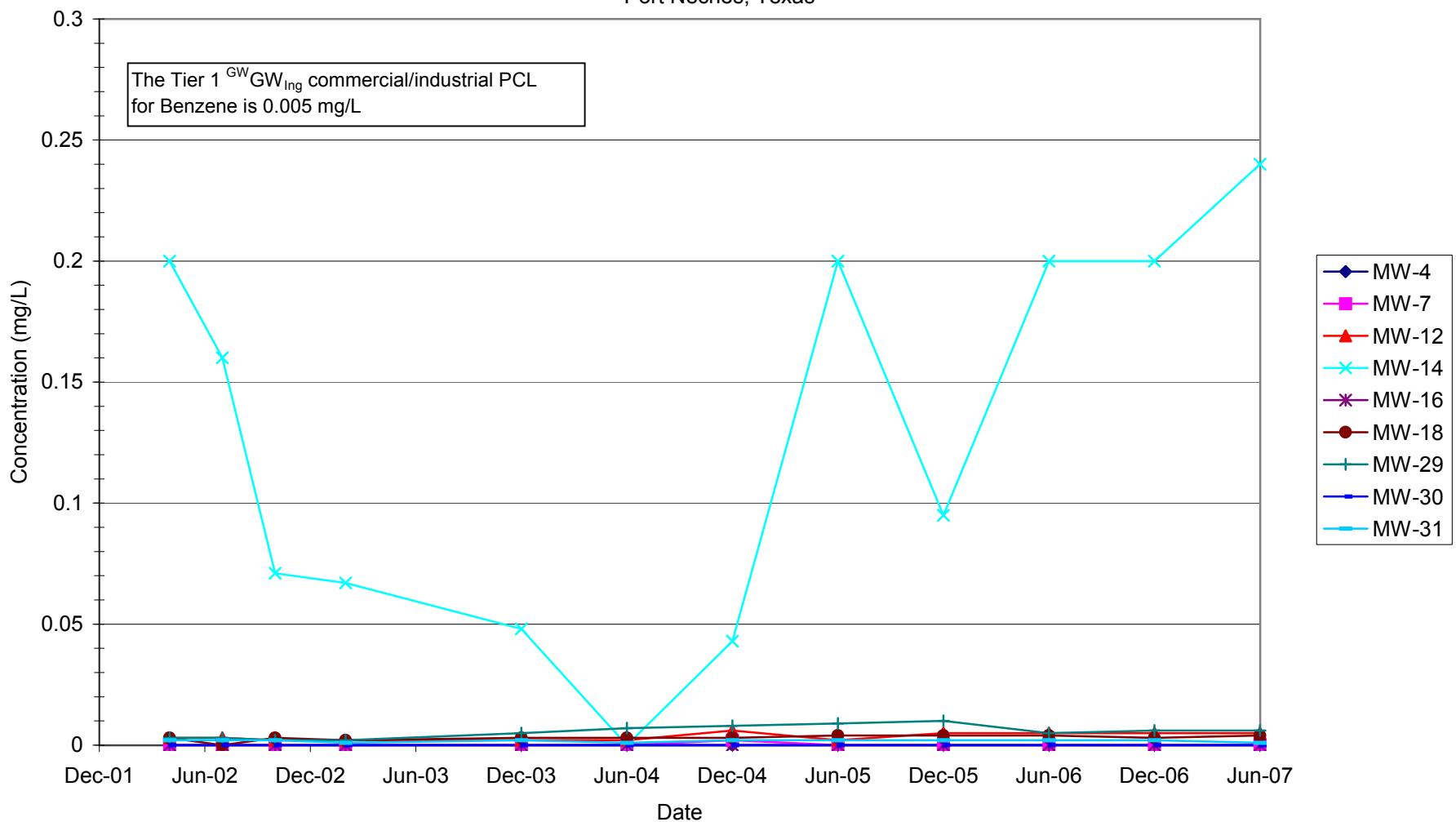
Time vs 1,4-Dioxane
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



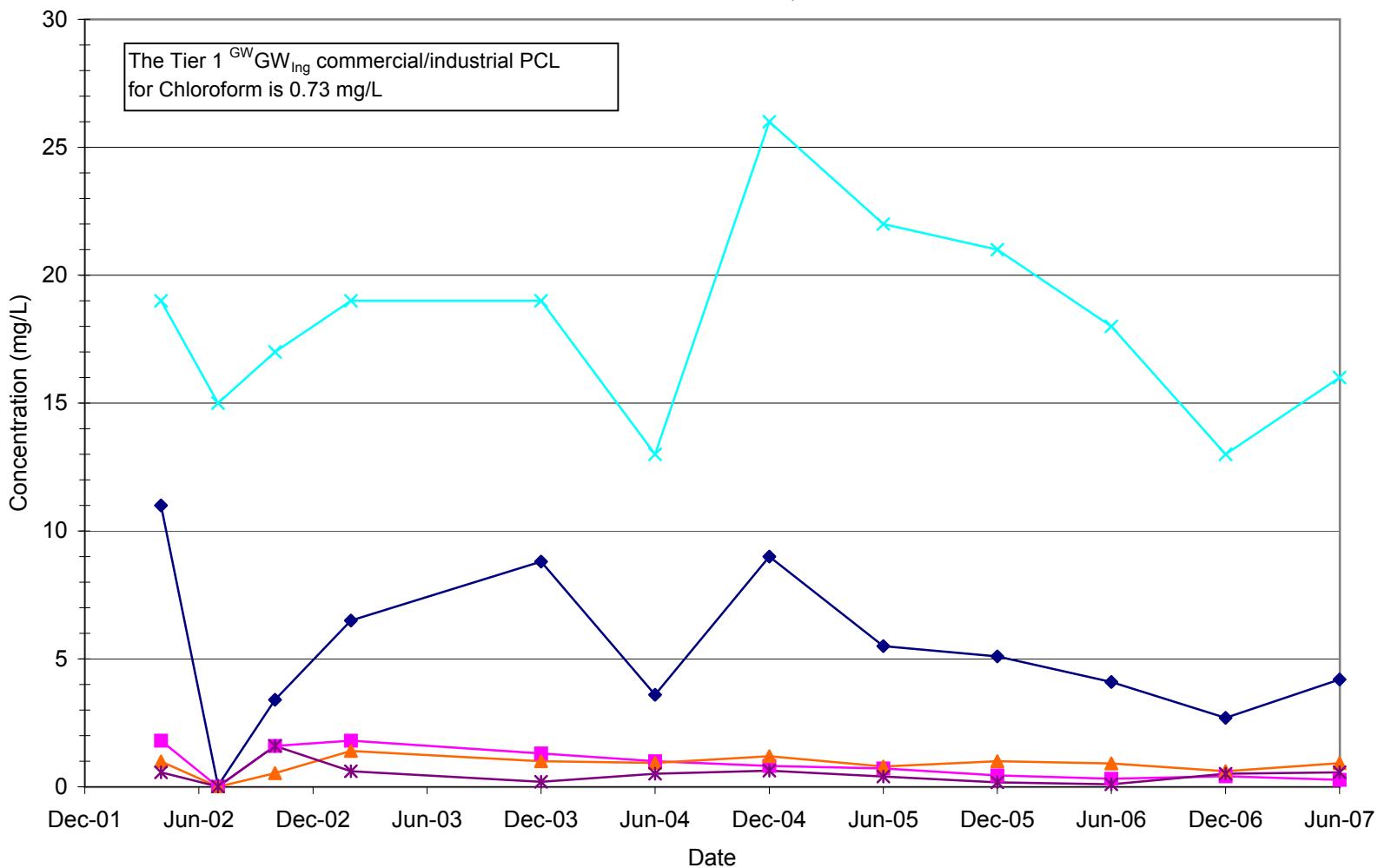
Time vs Benzene
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



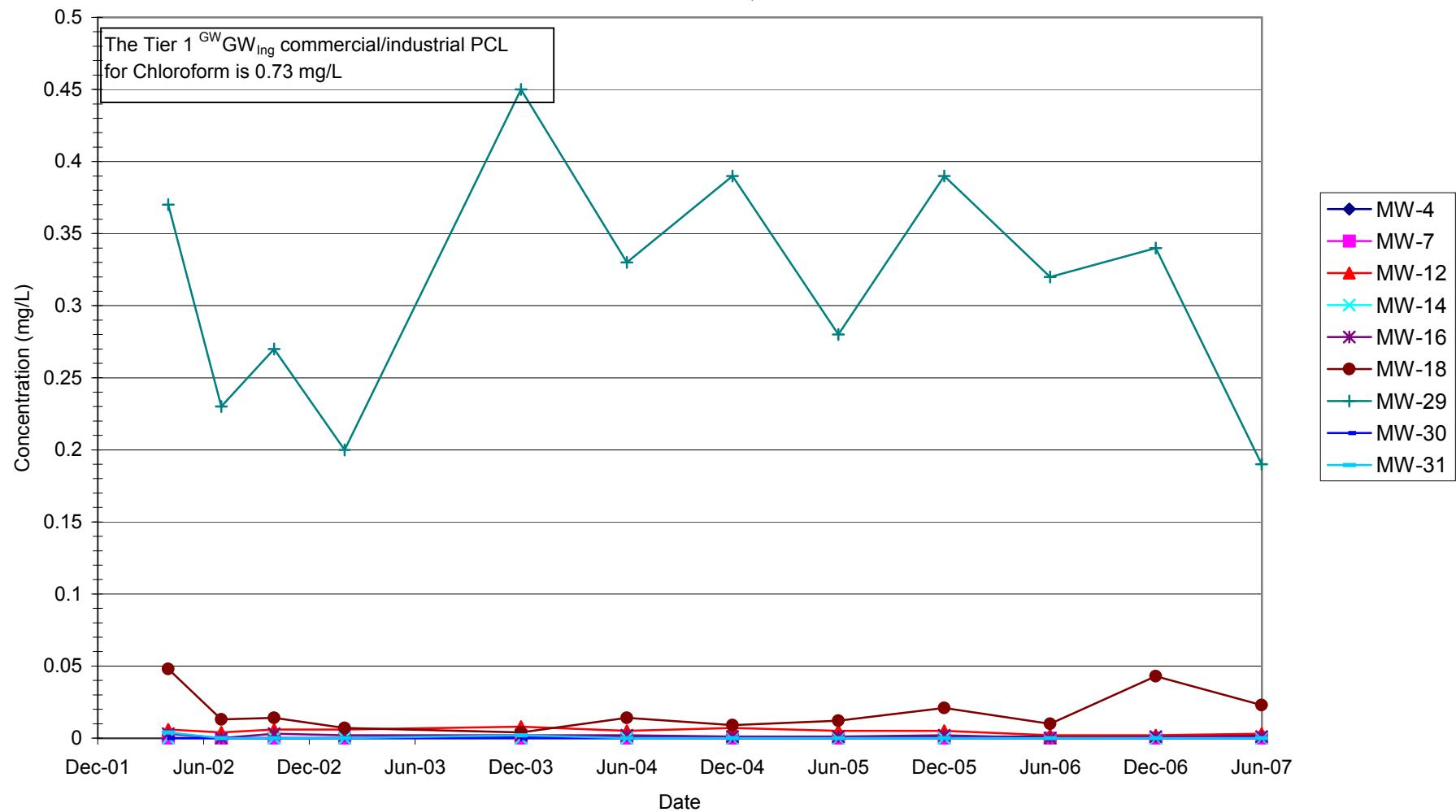
Time vs Benzene
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



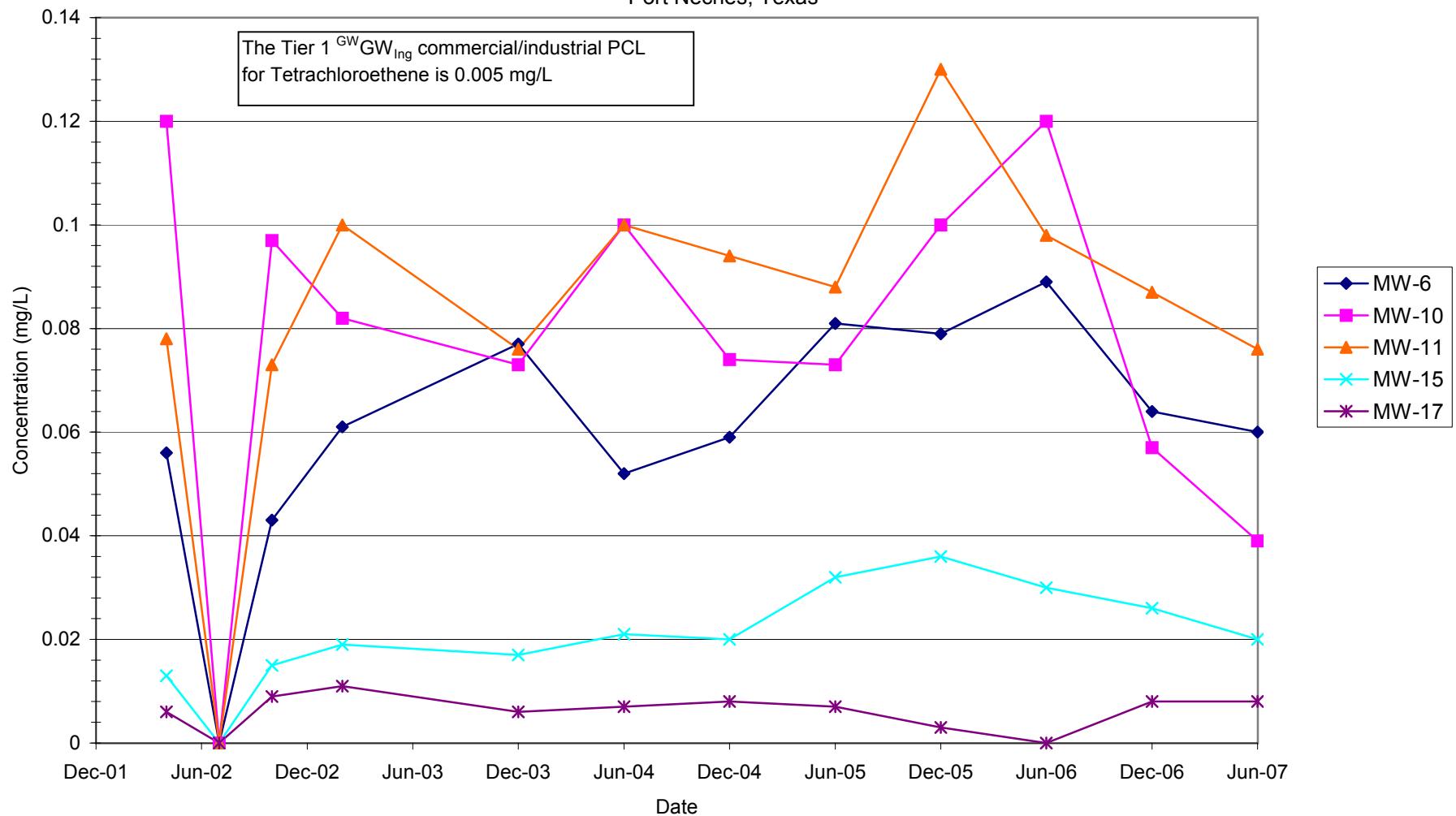
Time vs Chloroform
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



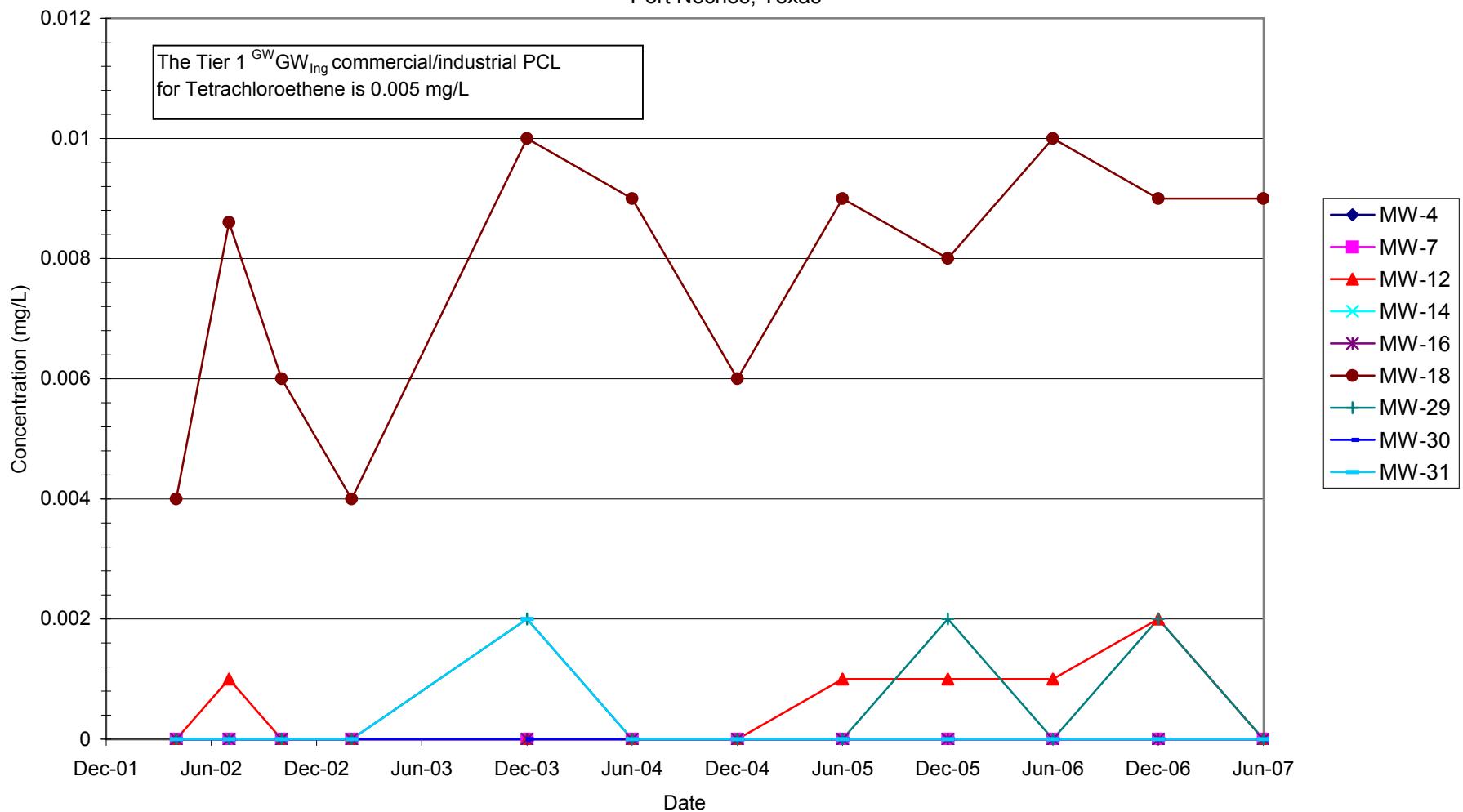
Time vs Chloroform
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



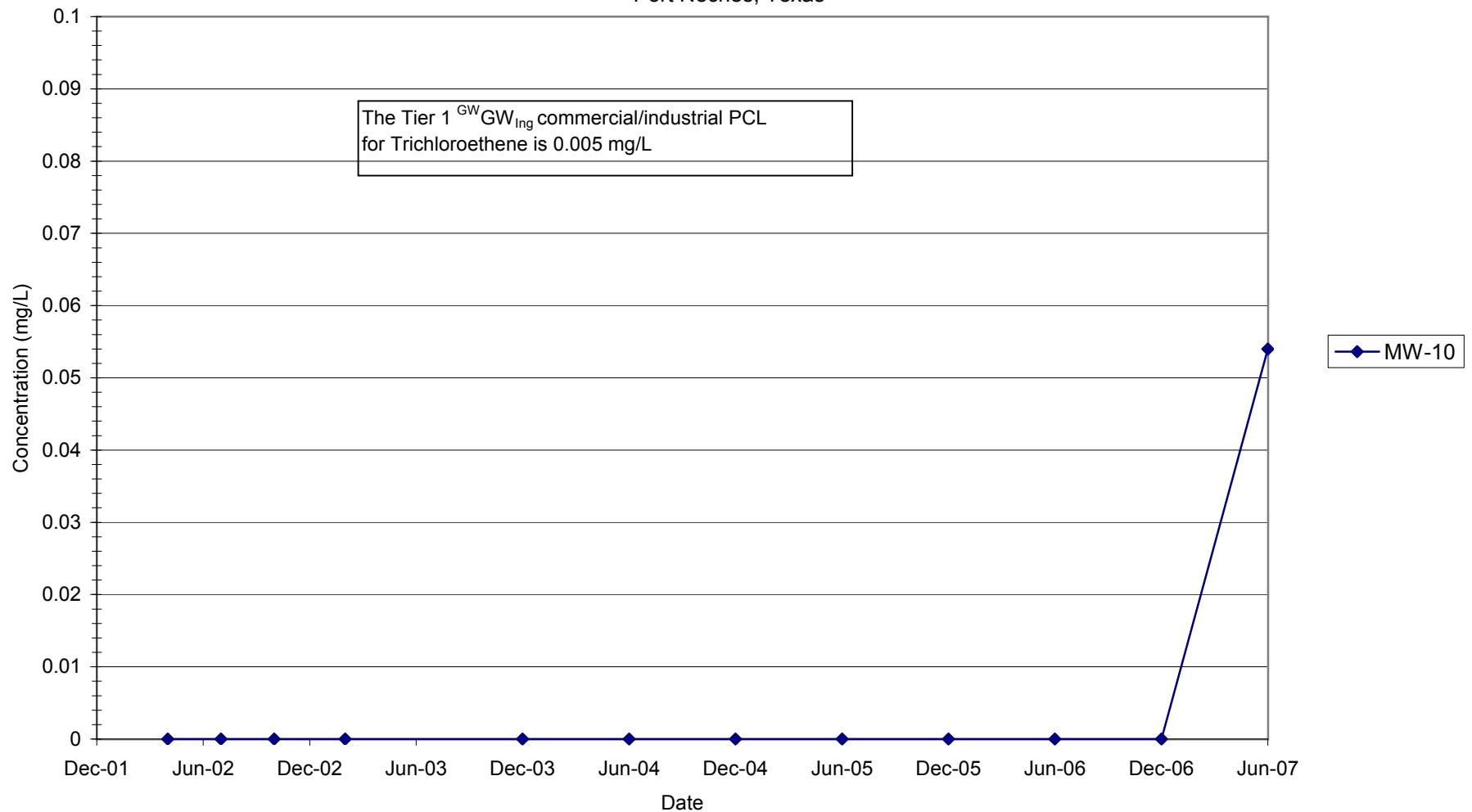
Time vs Tetrachloroethene
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



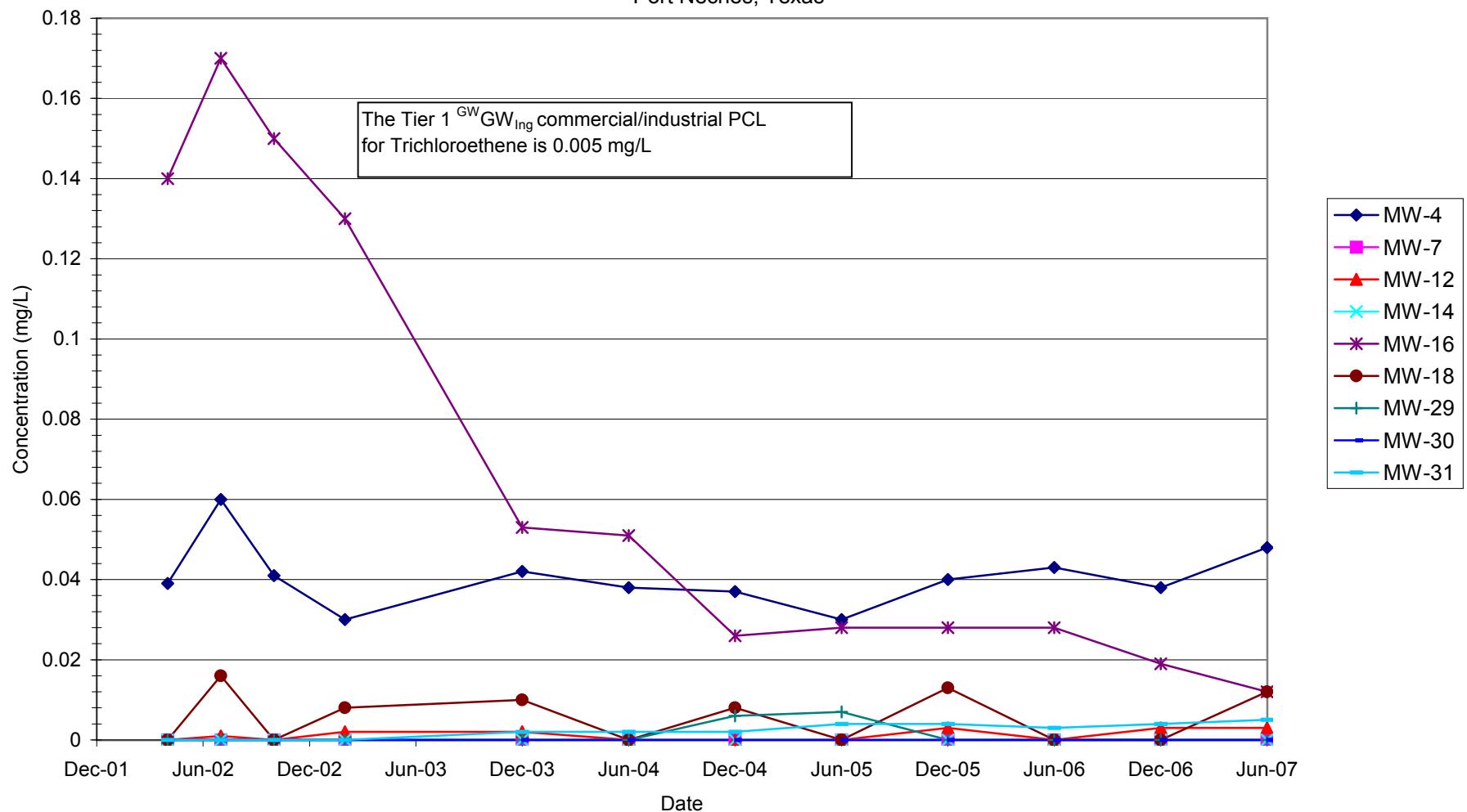
Time vs Tetrachloroethene
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



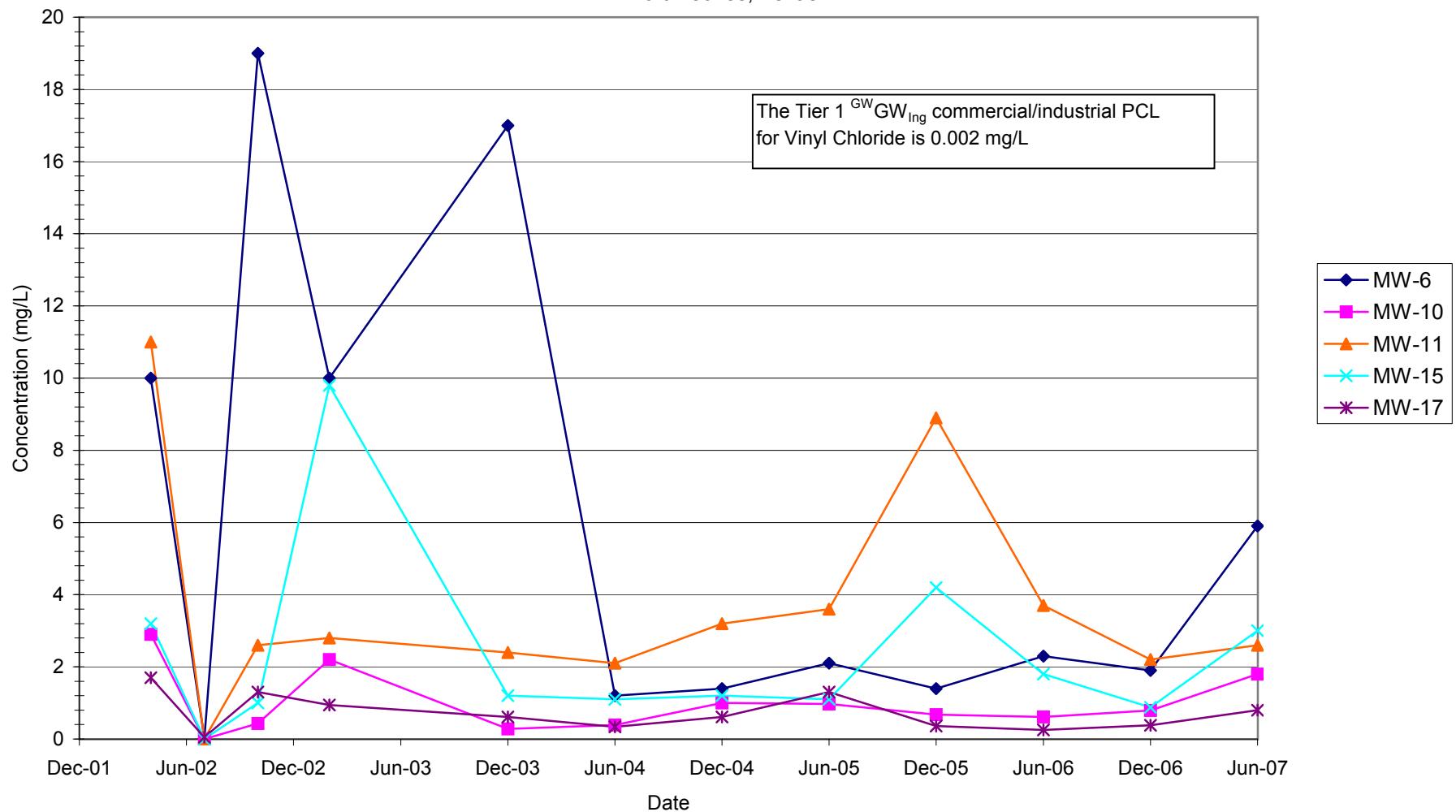
Time vs Trichloroethene
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



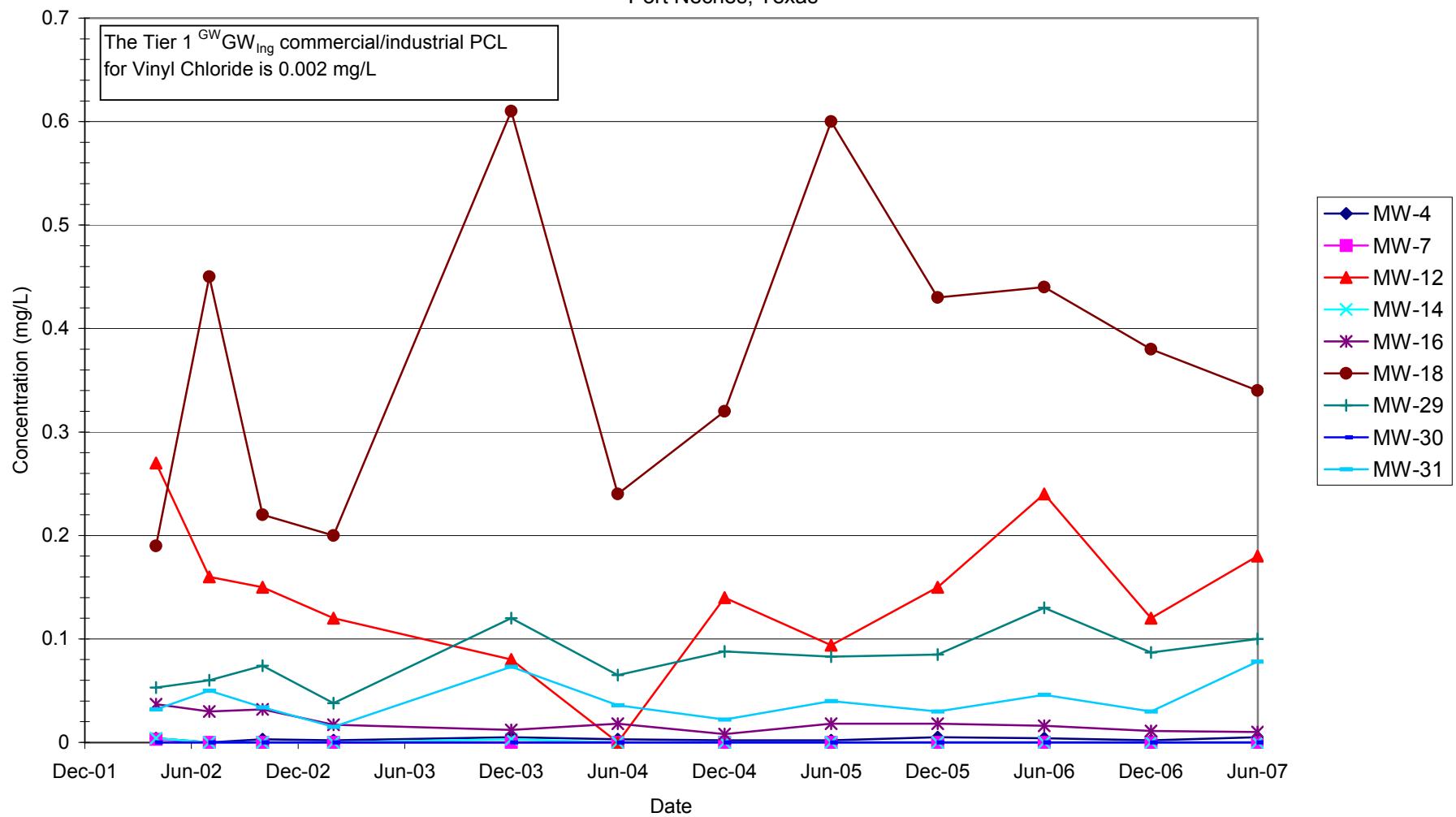
Time vs Trichloroethene
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



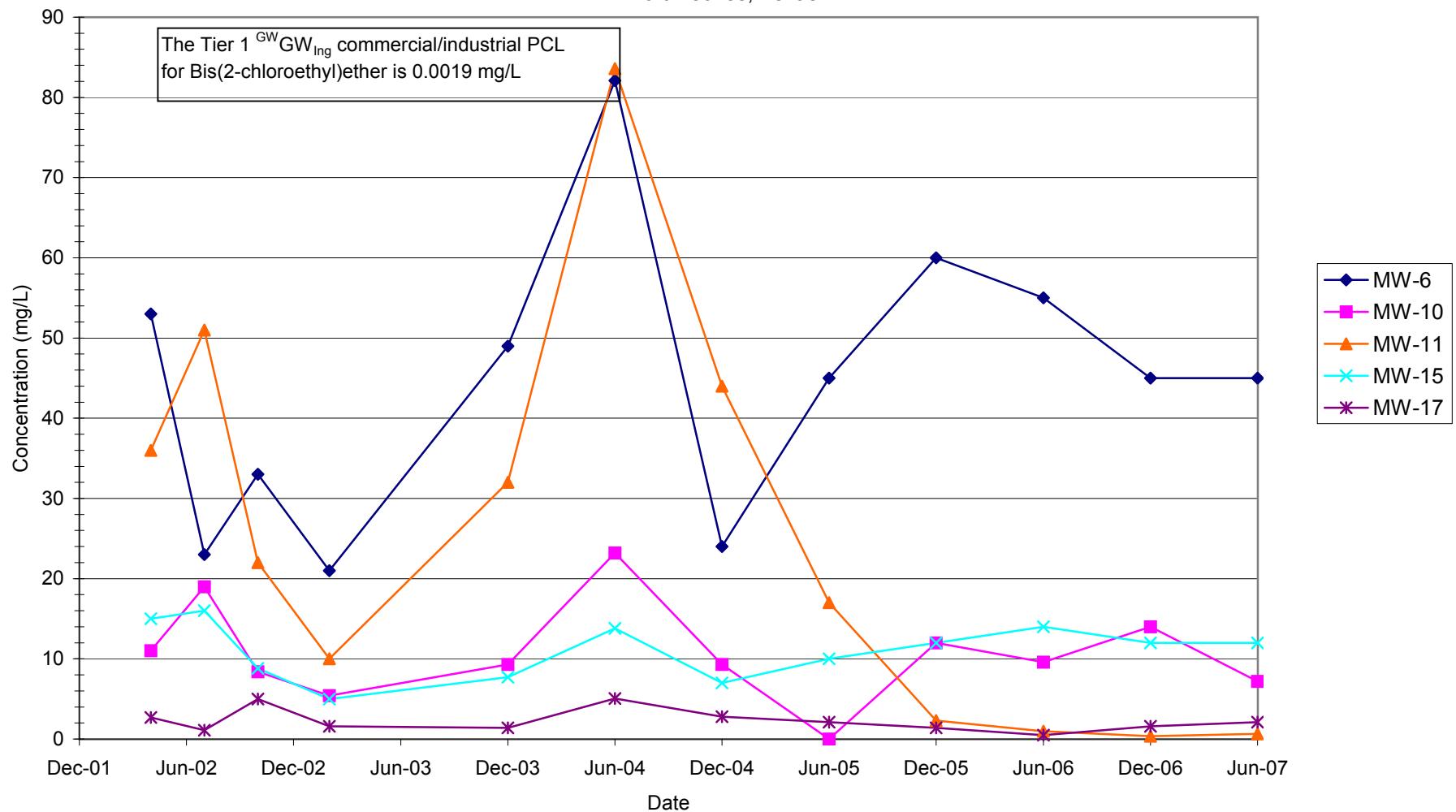
Time vs Vinyl Chloride
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



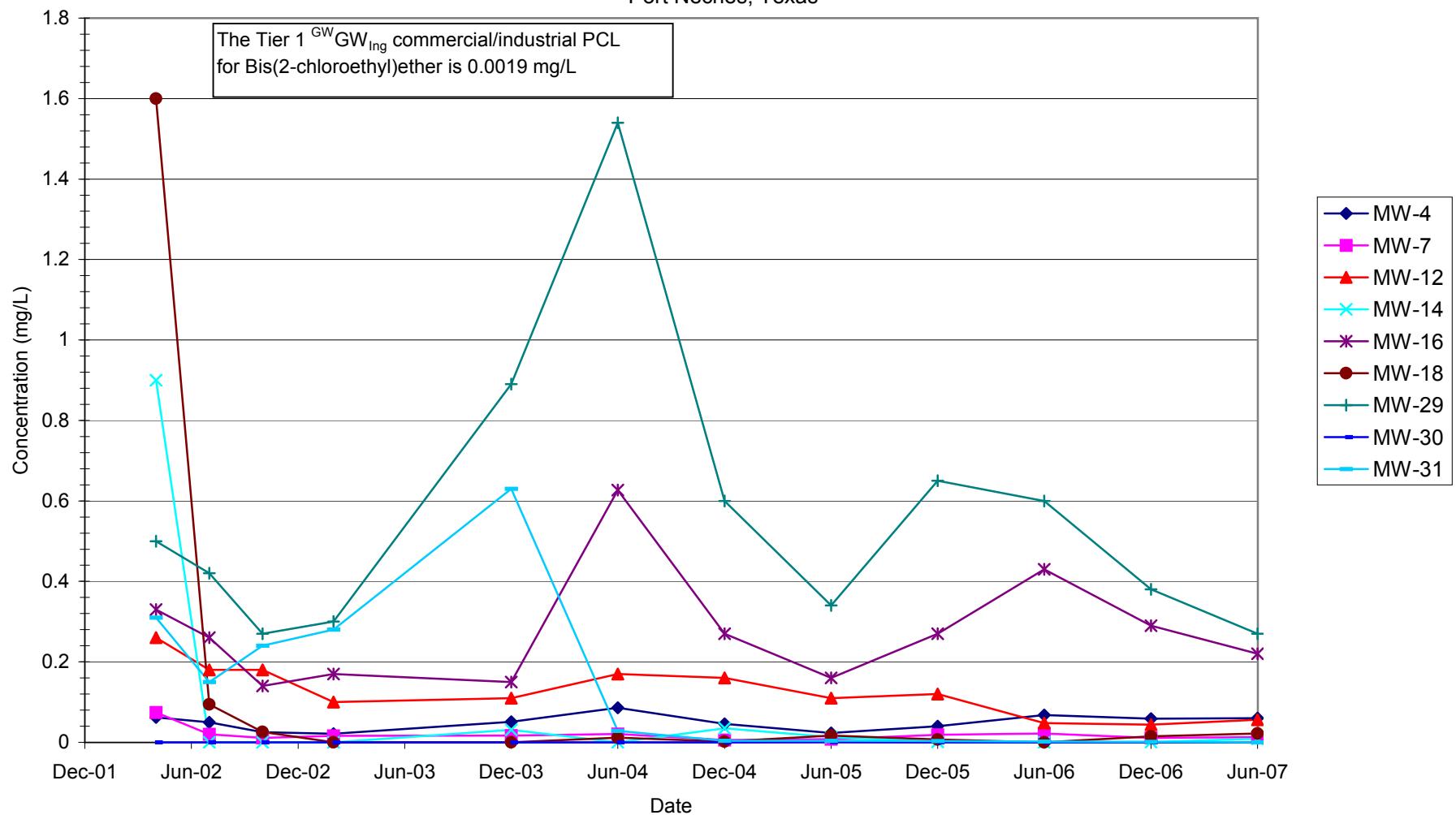
Time vs Vinyl Chloride
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



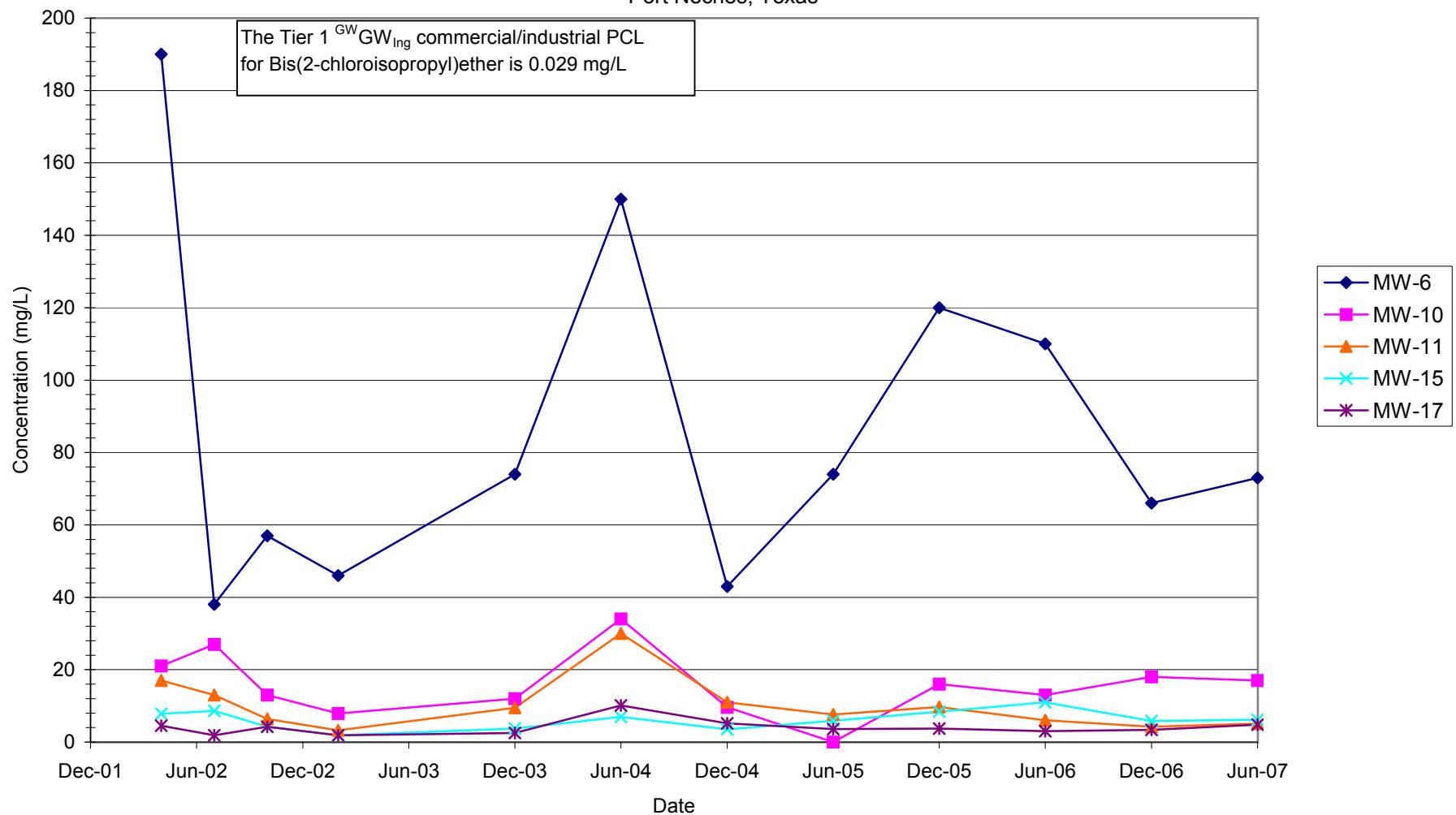
Time vs Bis(2-chloroethyl)ether
Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



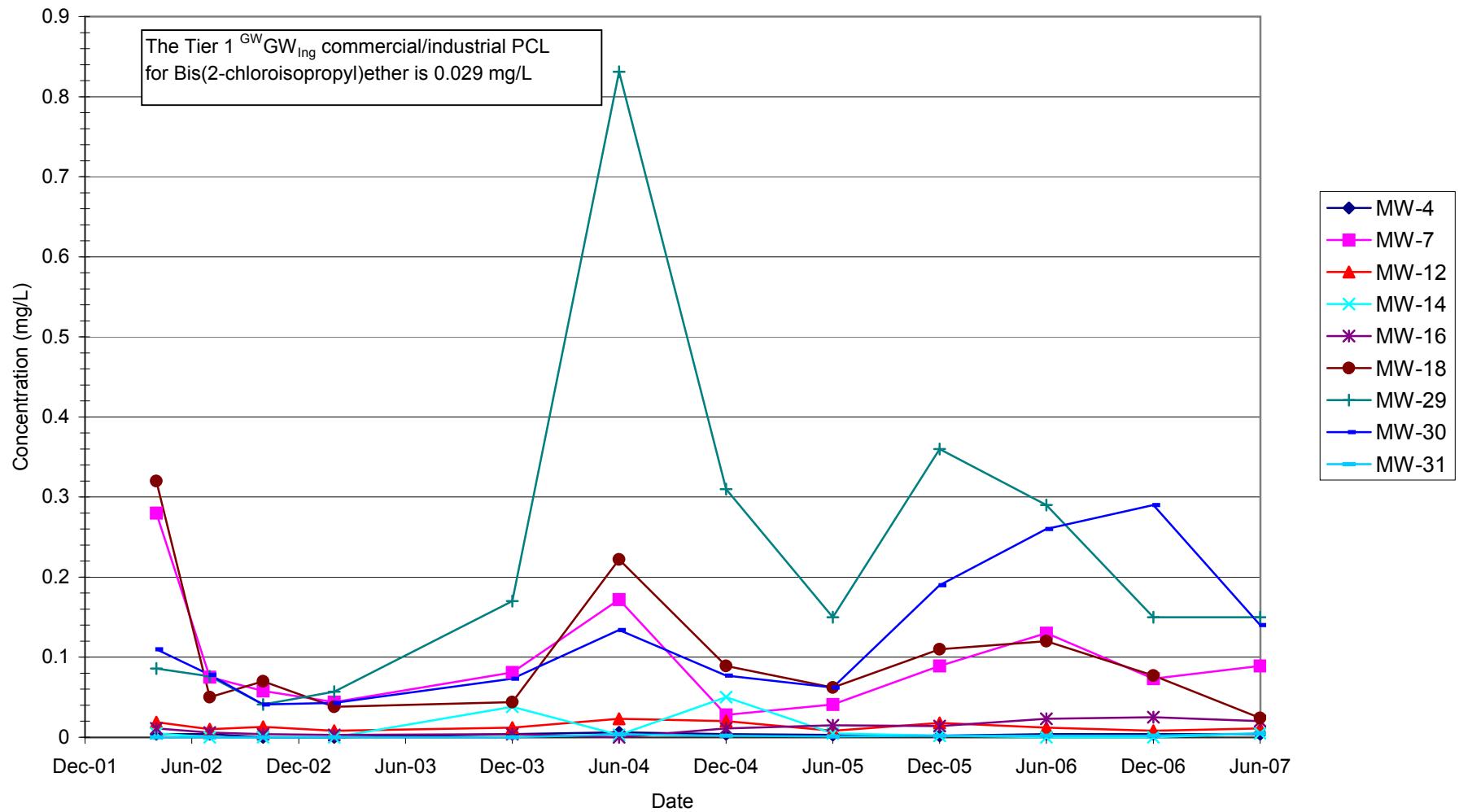
Time vs Bis(2-chloroethyl)ether
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



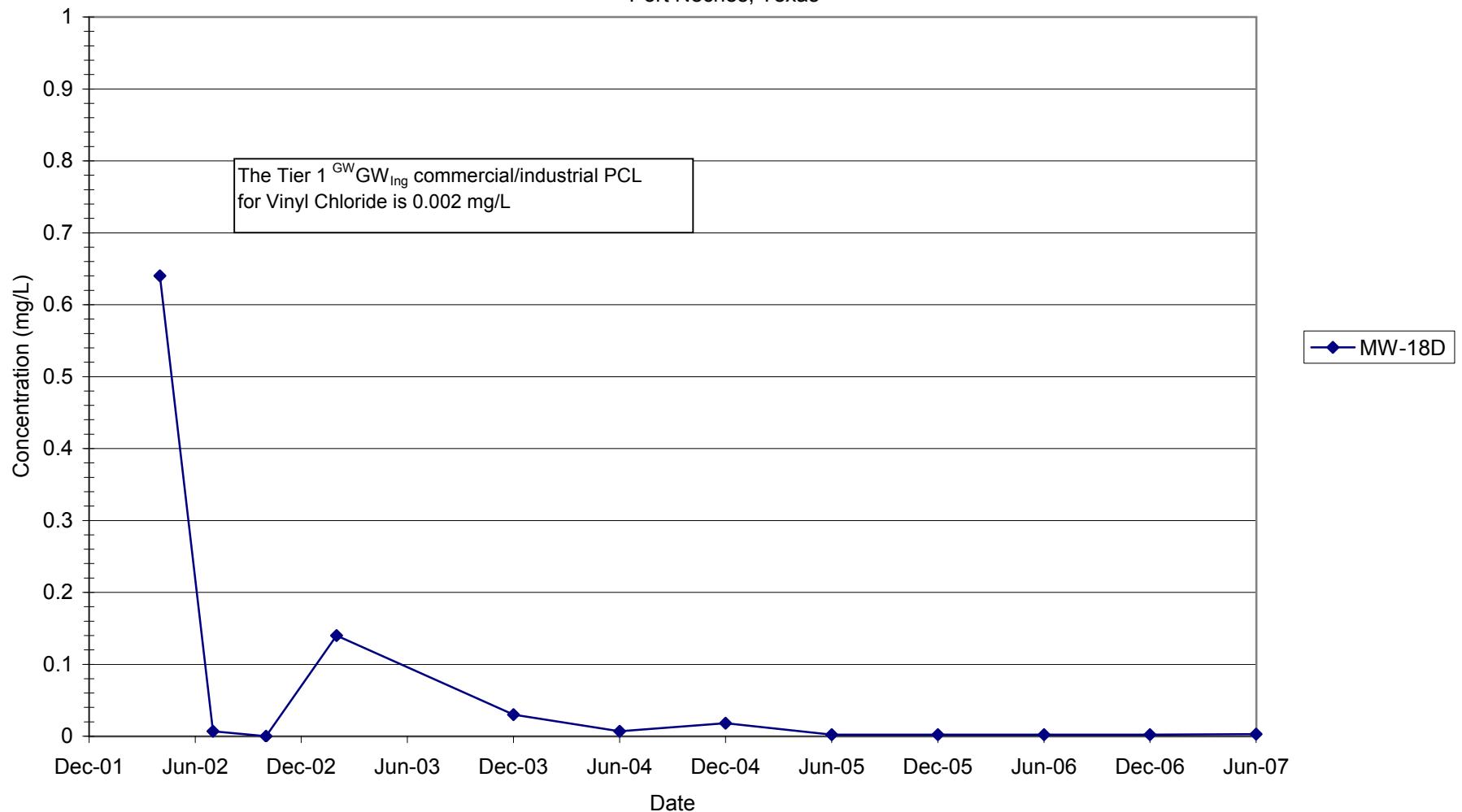
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Interior Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



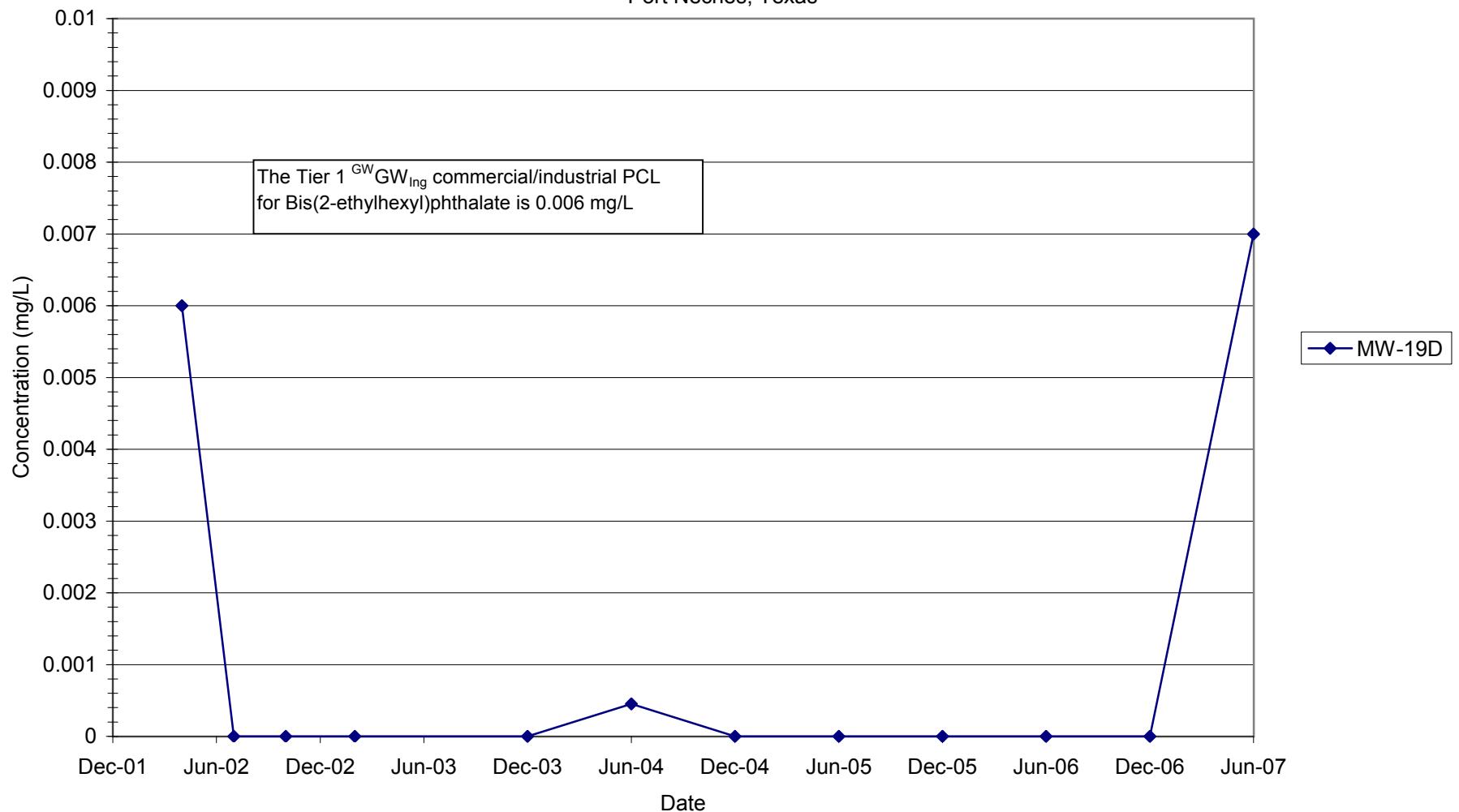
Time vs Bis(2-chloroisopropyl)ether
Outer Long-Term Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



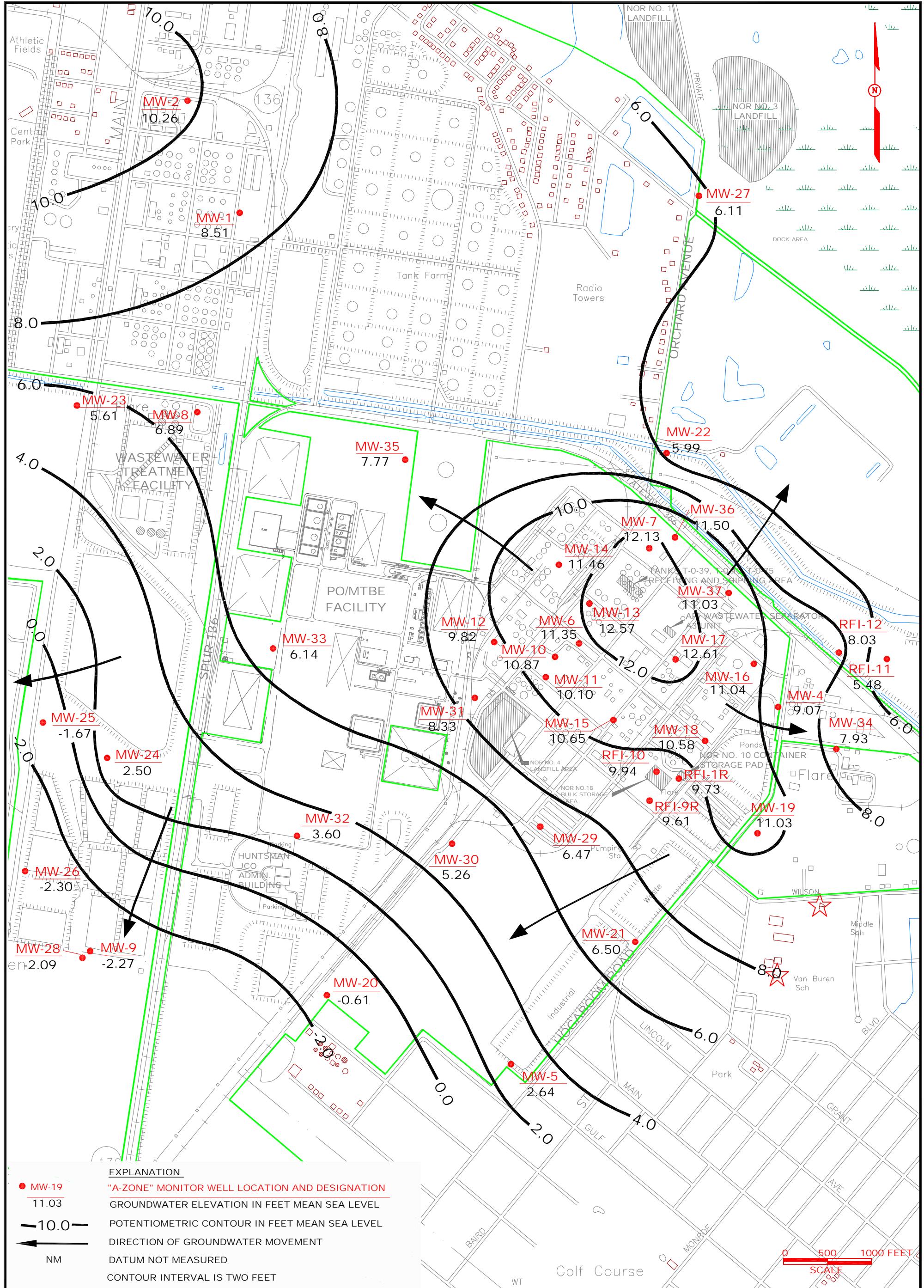
Time vs Vinyl Chloride
B-Zone Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



Time vs Bis(2-ethylhexyl)phthalate
B-Zone Wells
Huntsman Petrochemical Corporation
Port Neches Performance Products Facility
Port Neches, Texas



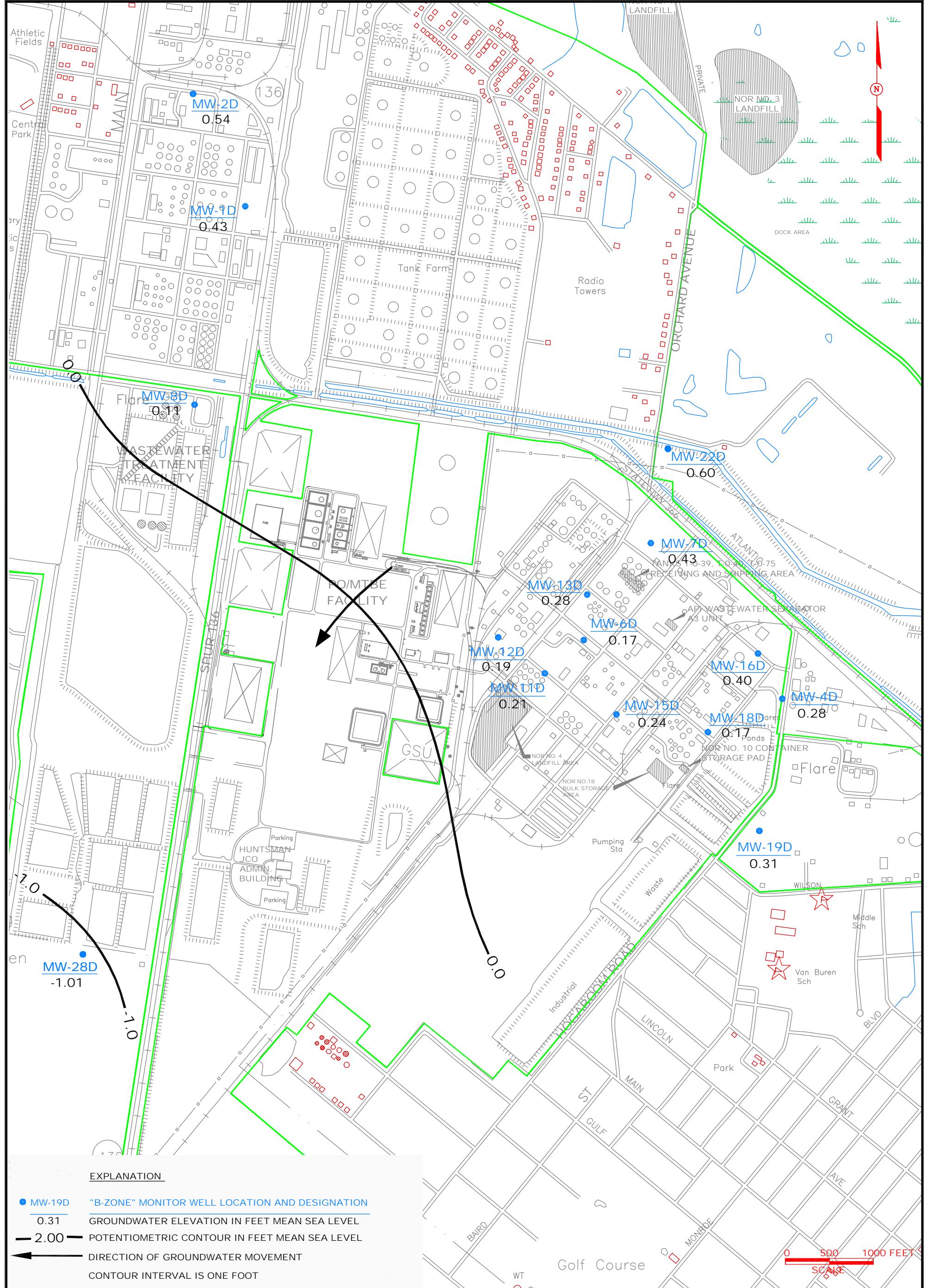
2689-02 TASK 2
(FIGURES 4 through 31)



POTENIOMETRIC SURFACE MAP ("A-ZONE") June 5, 2007

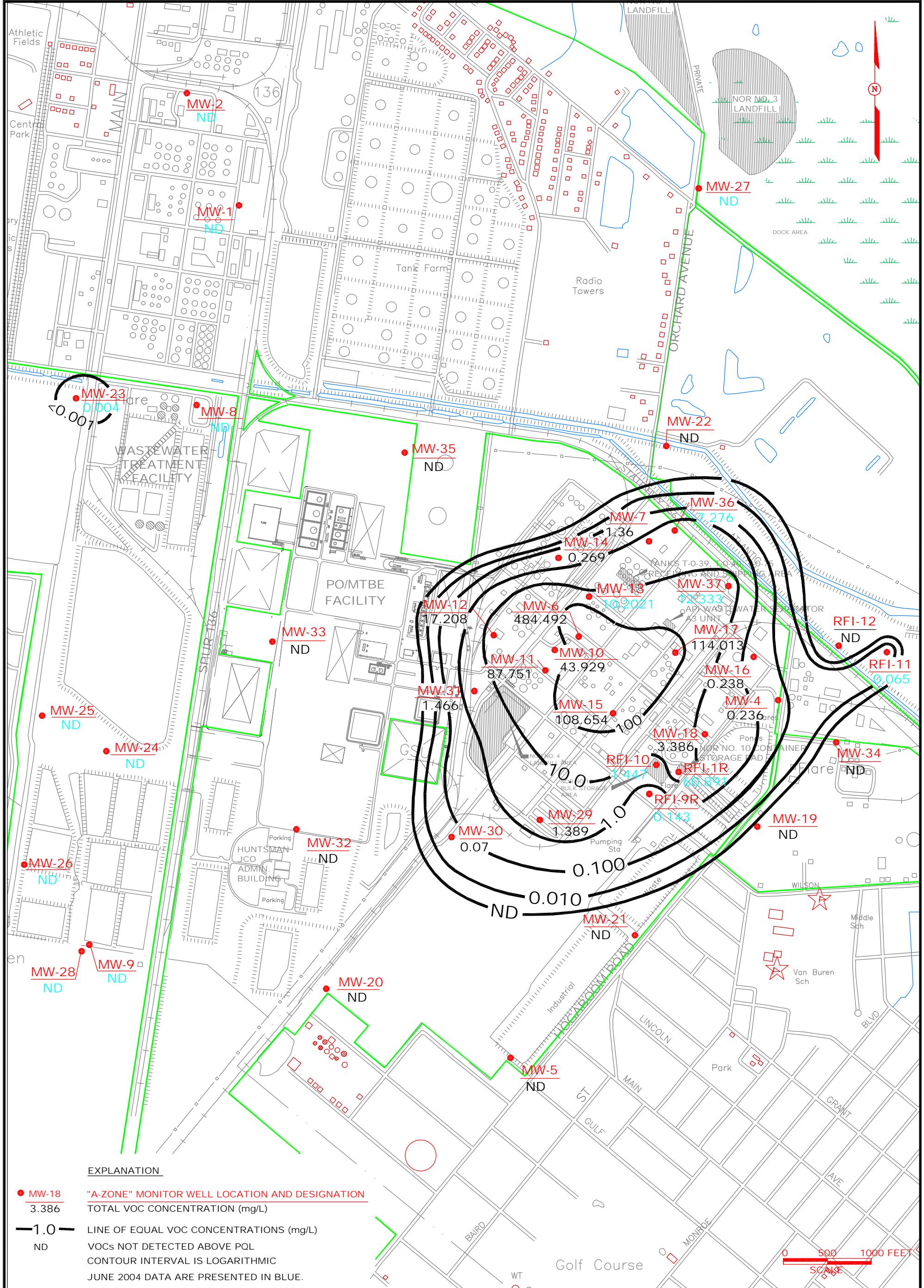
HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002	TASK-0002



POTENTIOMETRIC SURFACE MAP ("B-ZONE") June 5, 2007

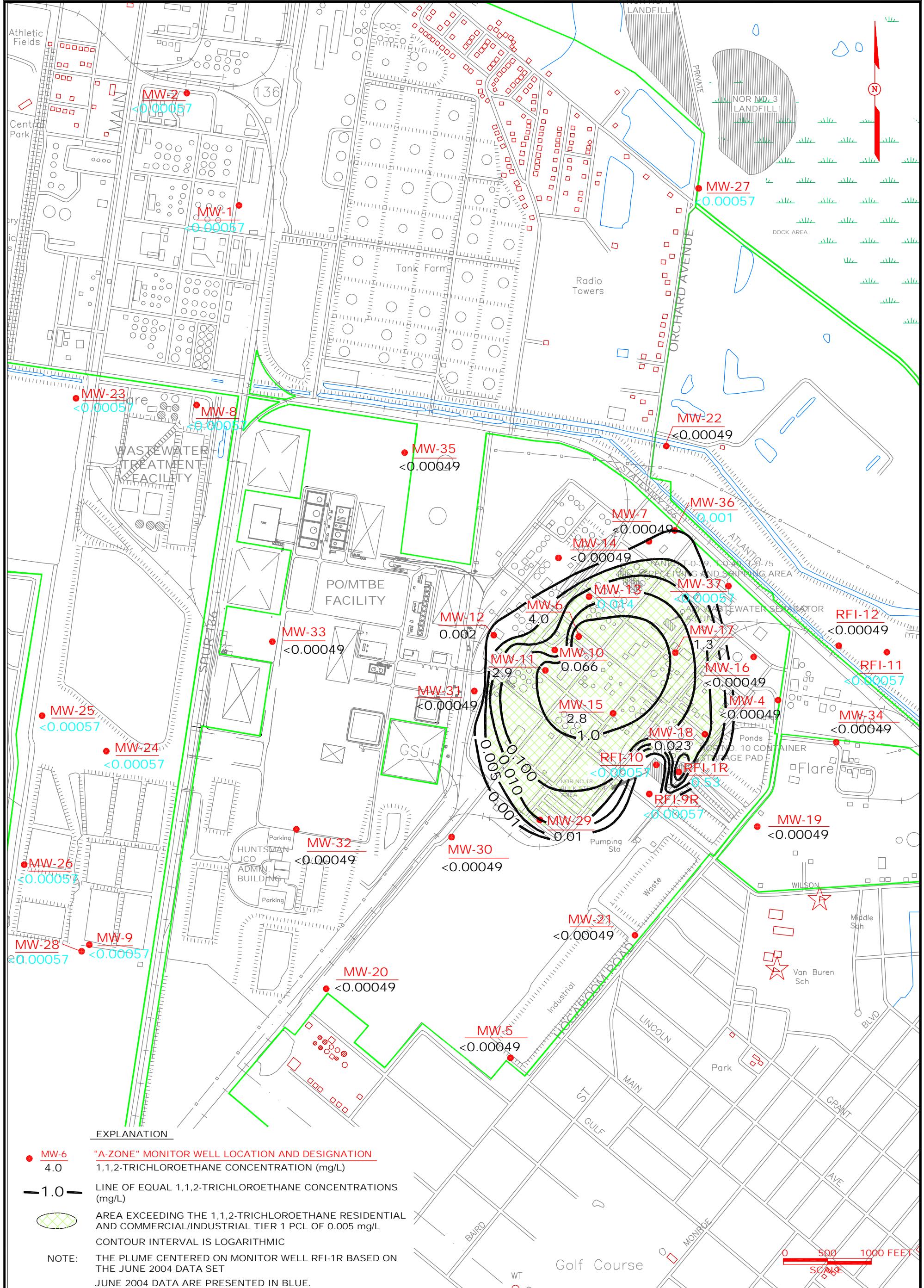
HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

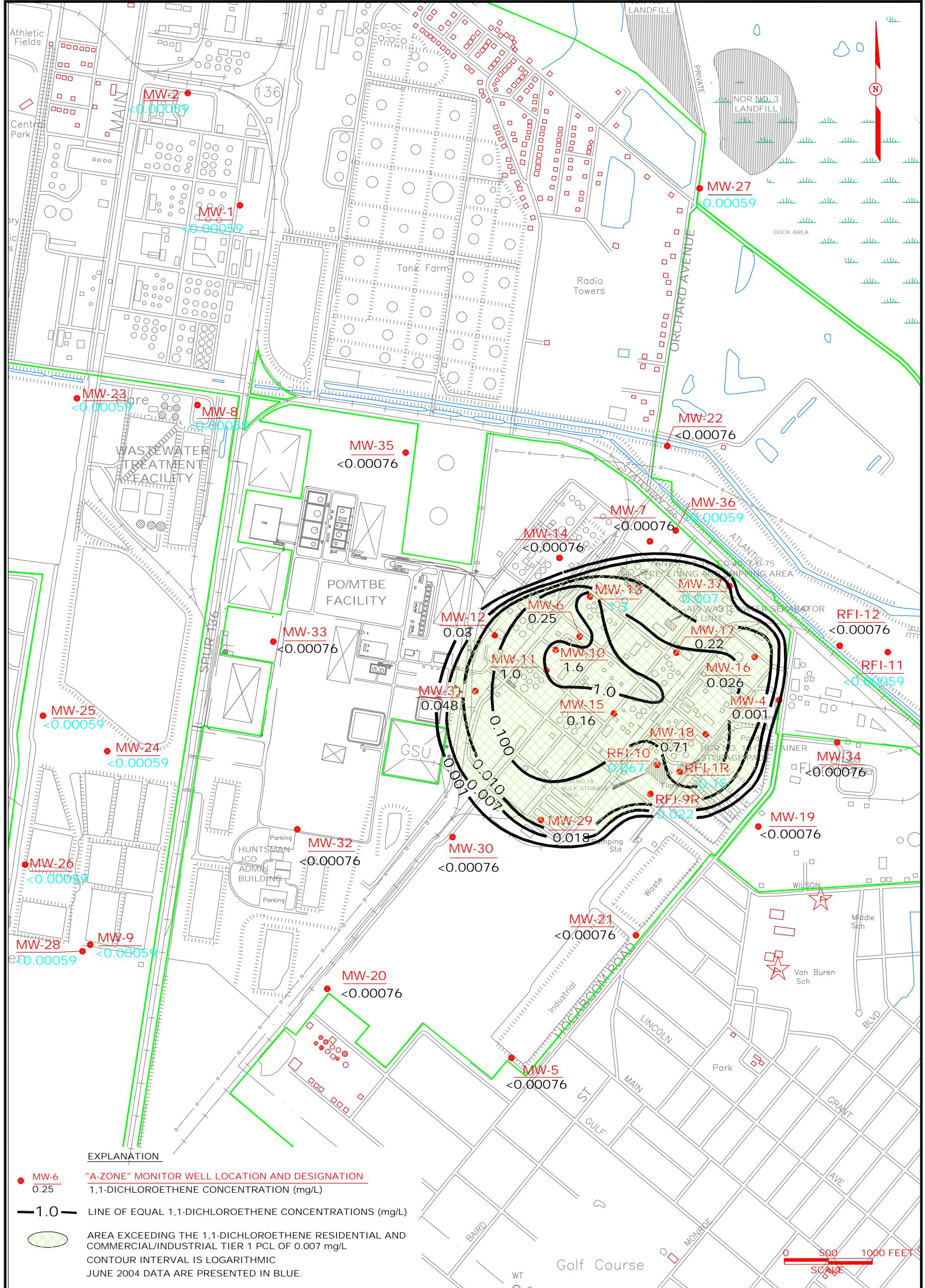


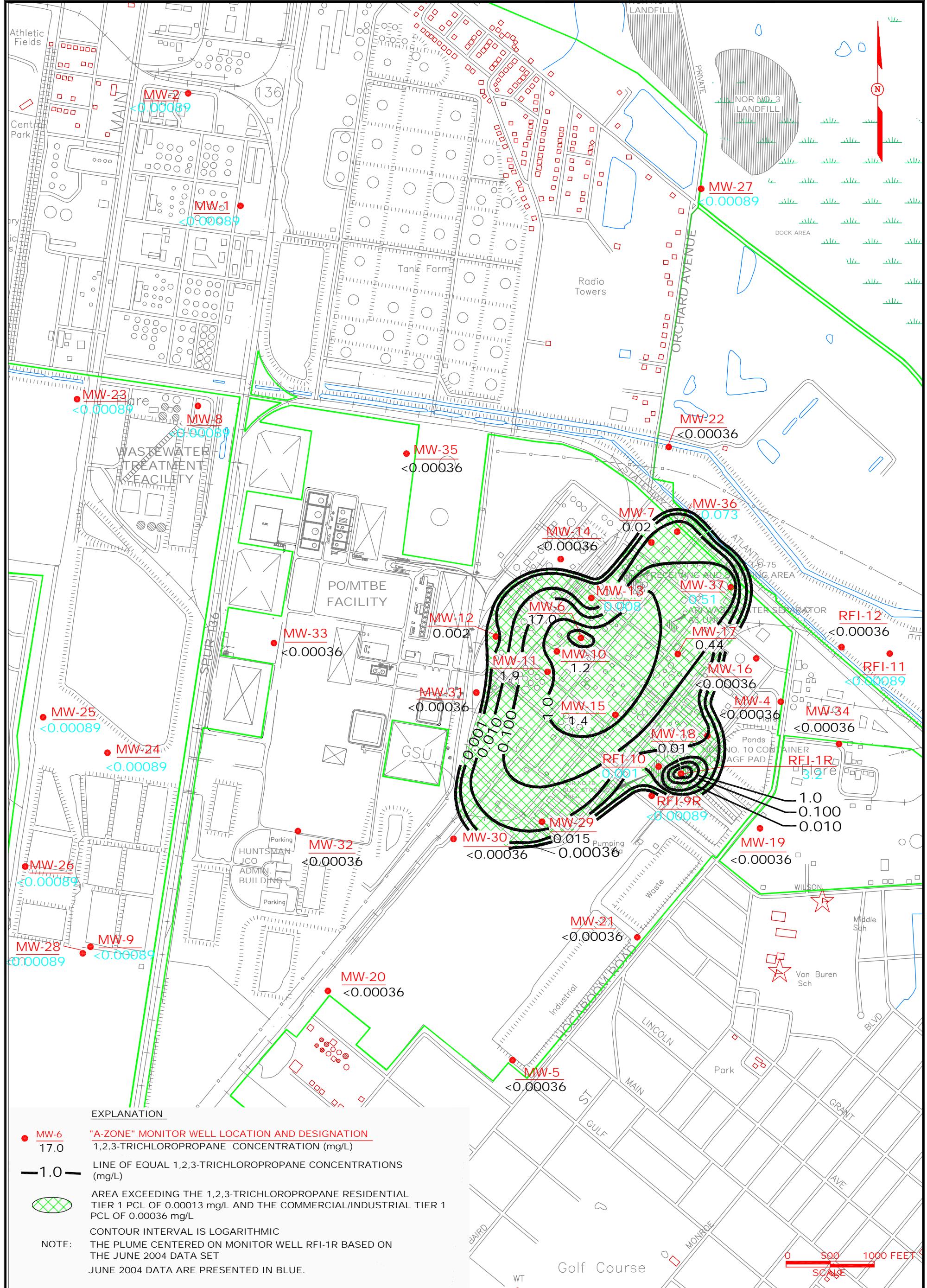
TOTAL VOLATILE ORGANIC COMPOUNDS ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002	TASK-0002

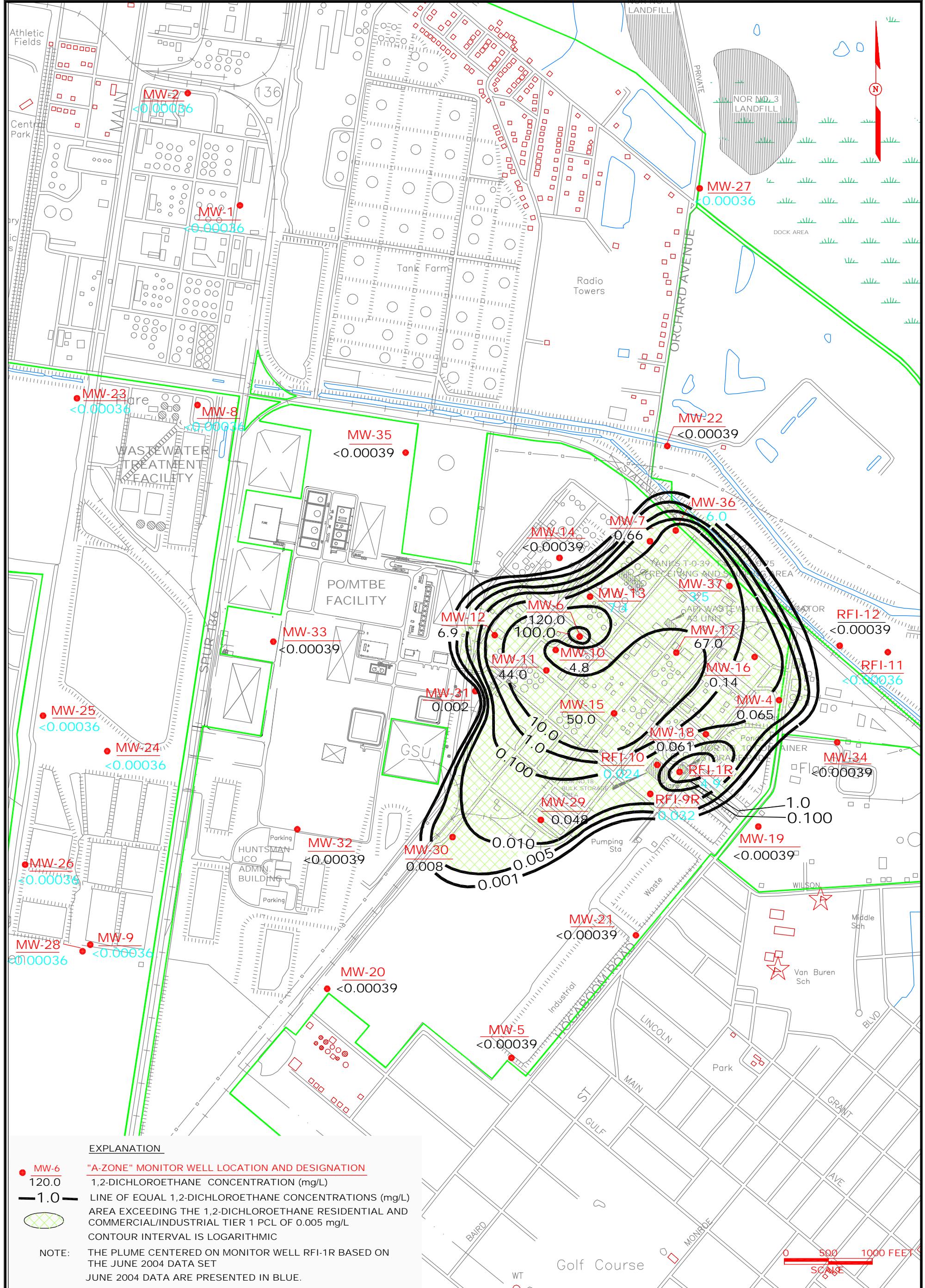


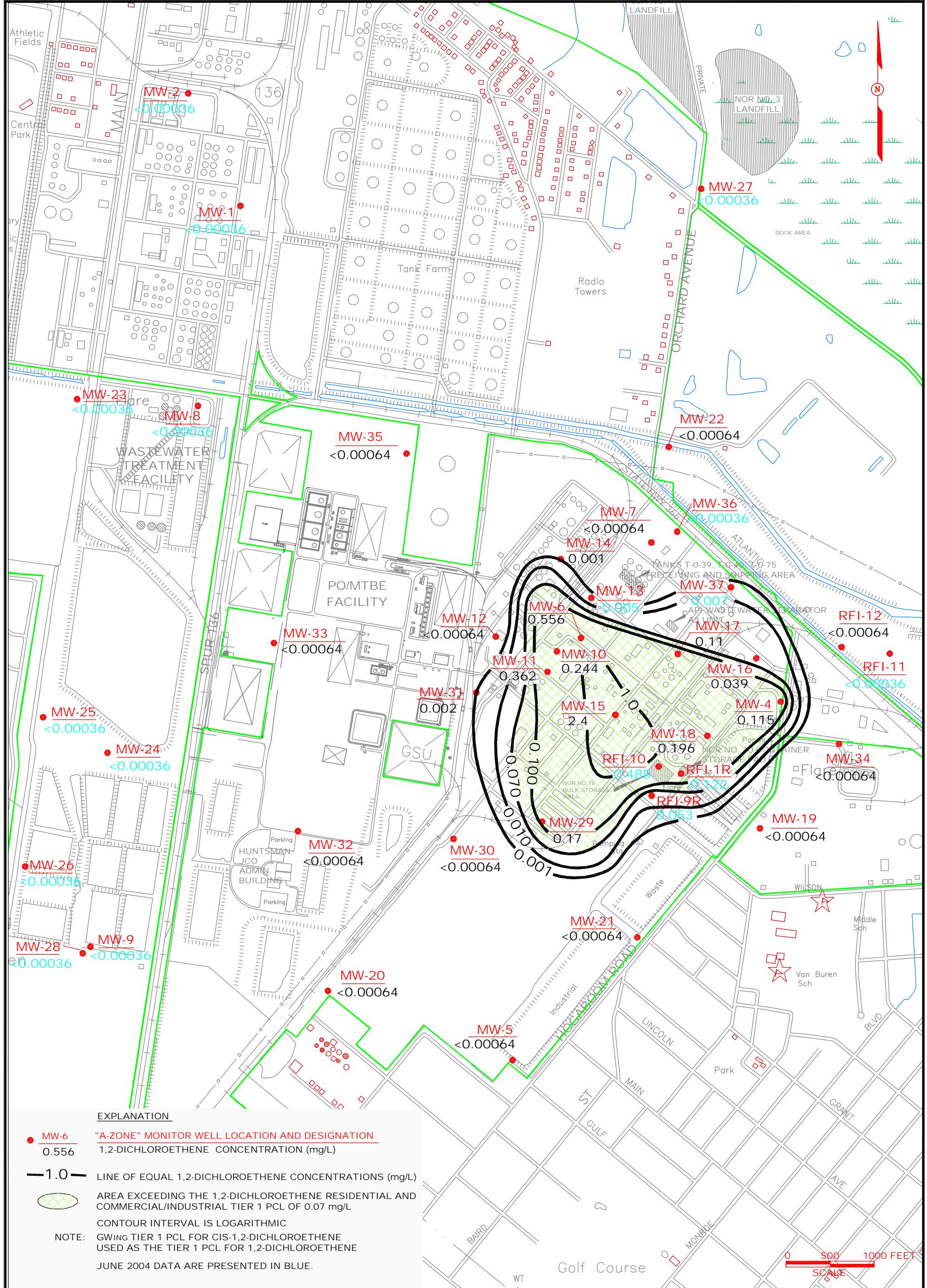




1,2,3-TRICHLOROPROPANE ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

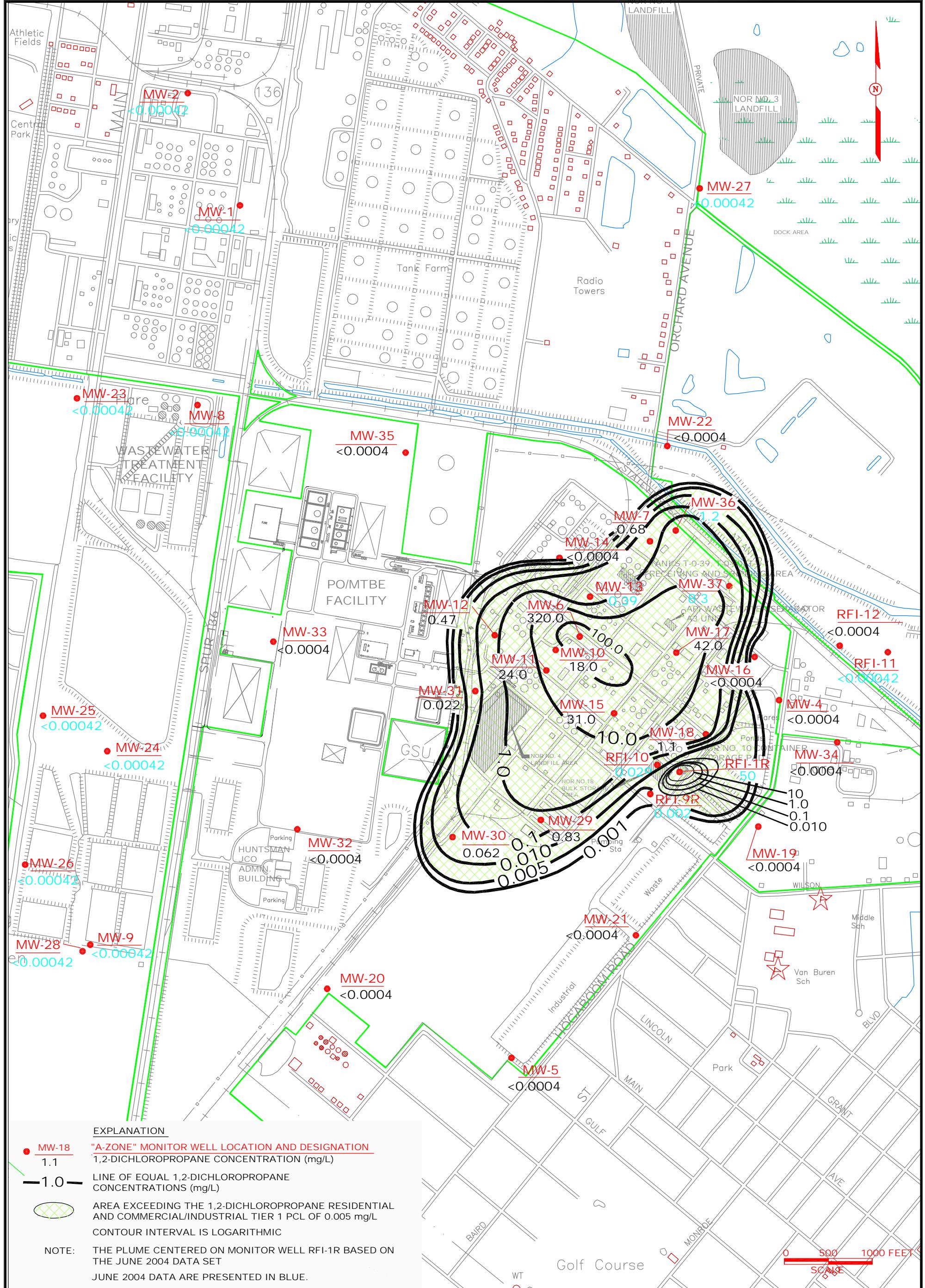


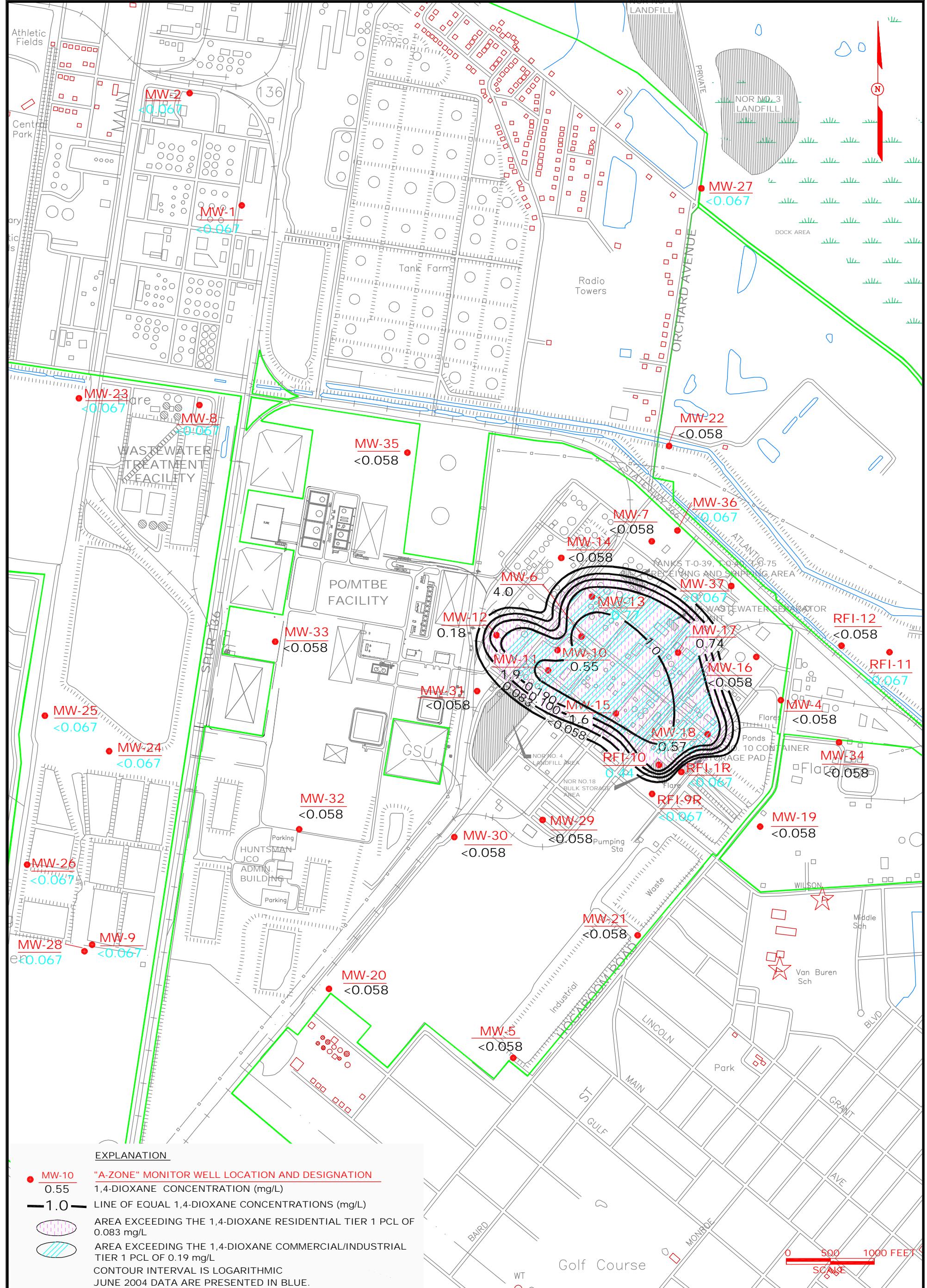


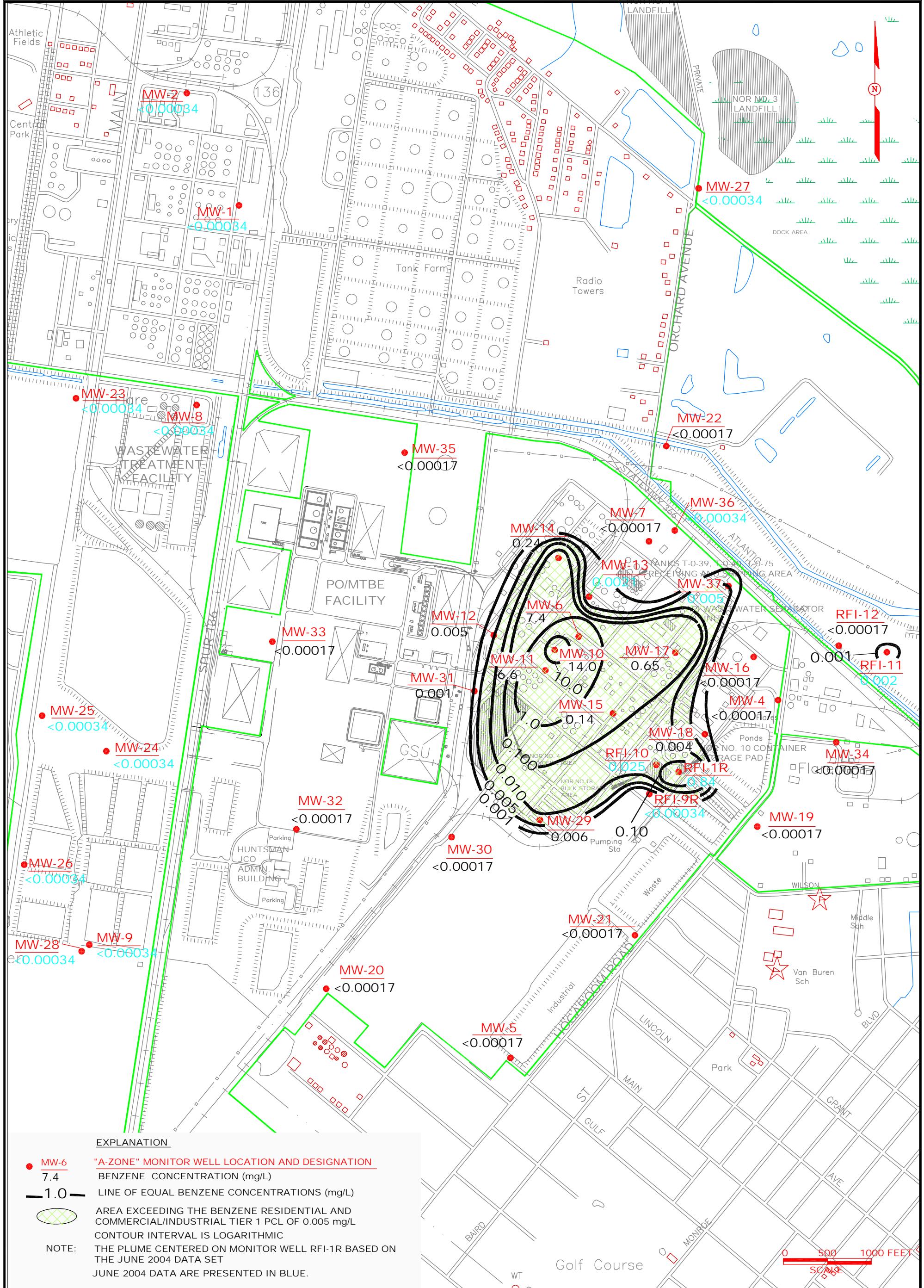
1,2-DICHLOROETHENE (TOTAL) ("A-ZONE") June 2007

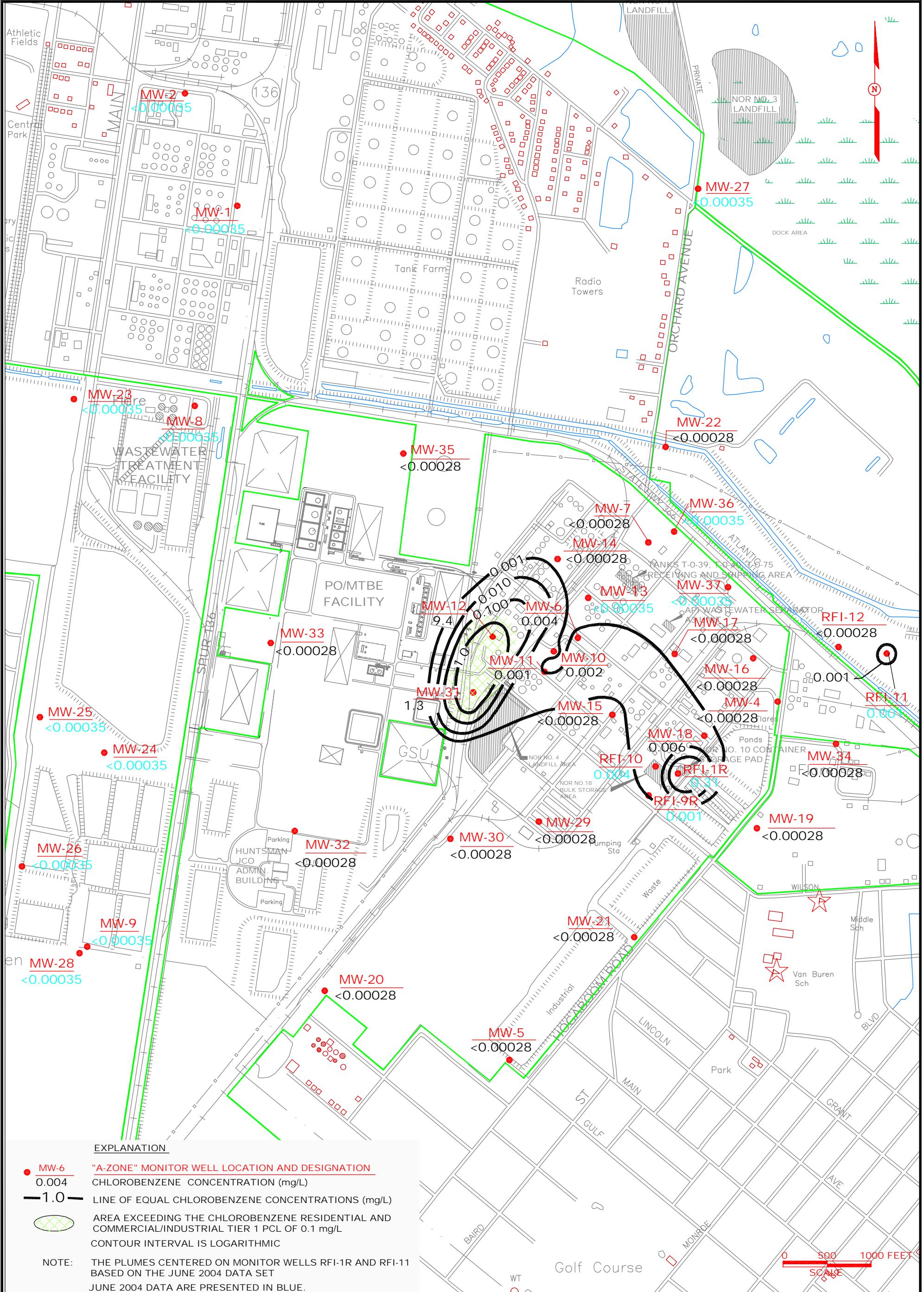
HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002	11
TASK-0002	







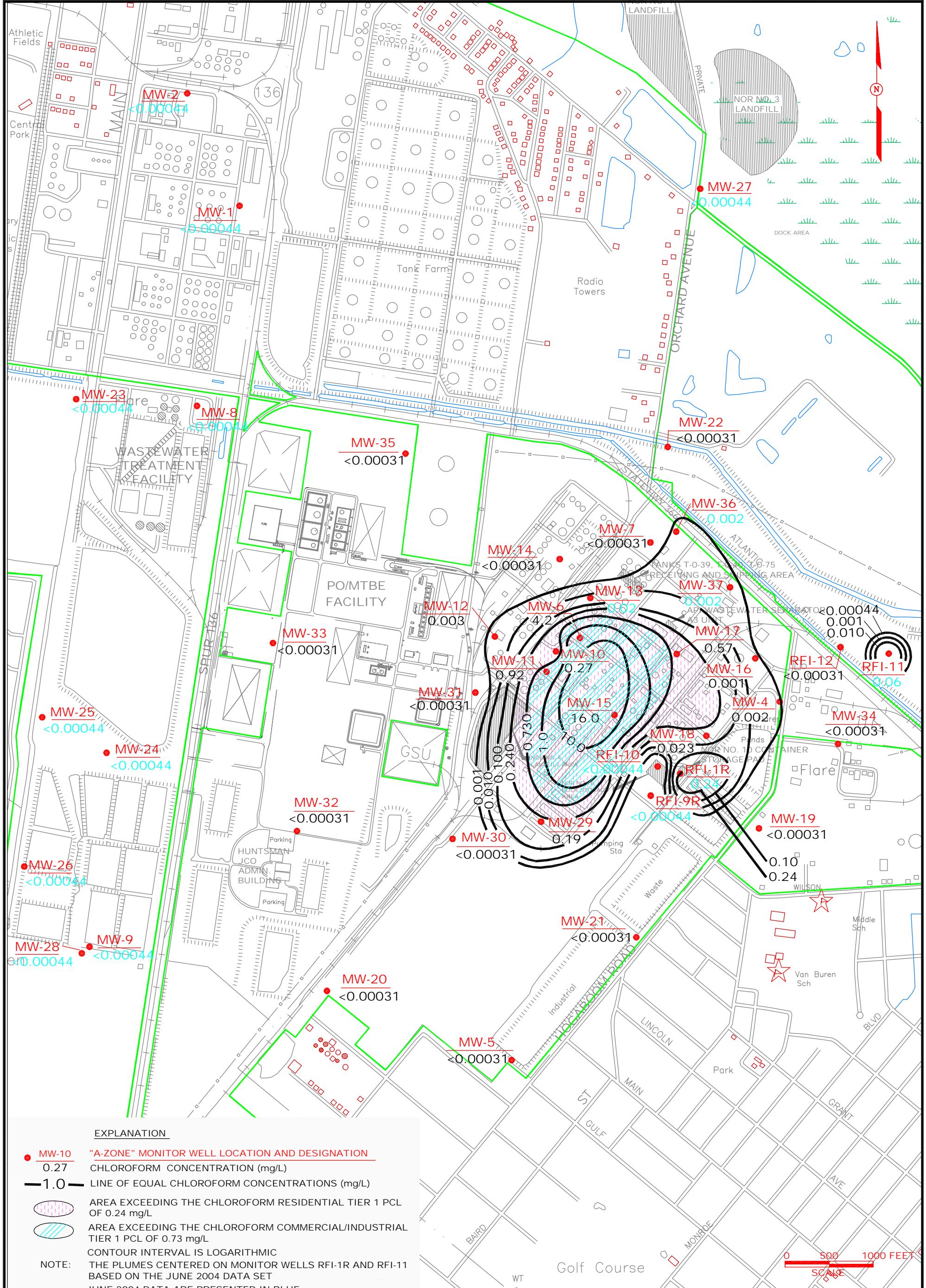


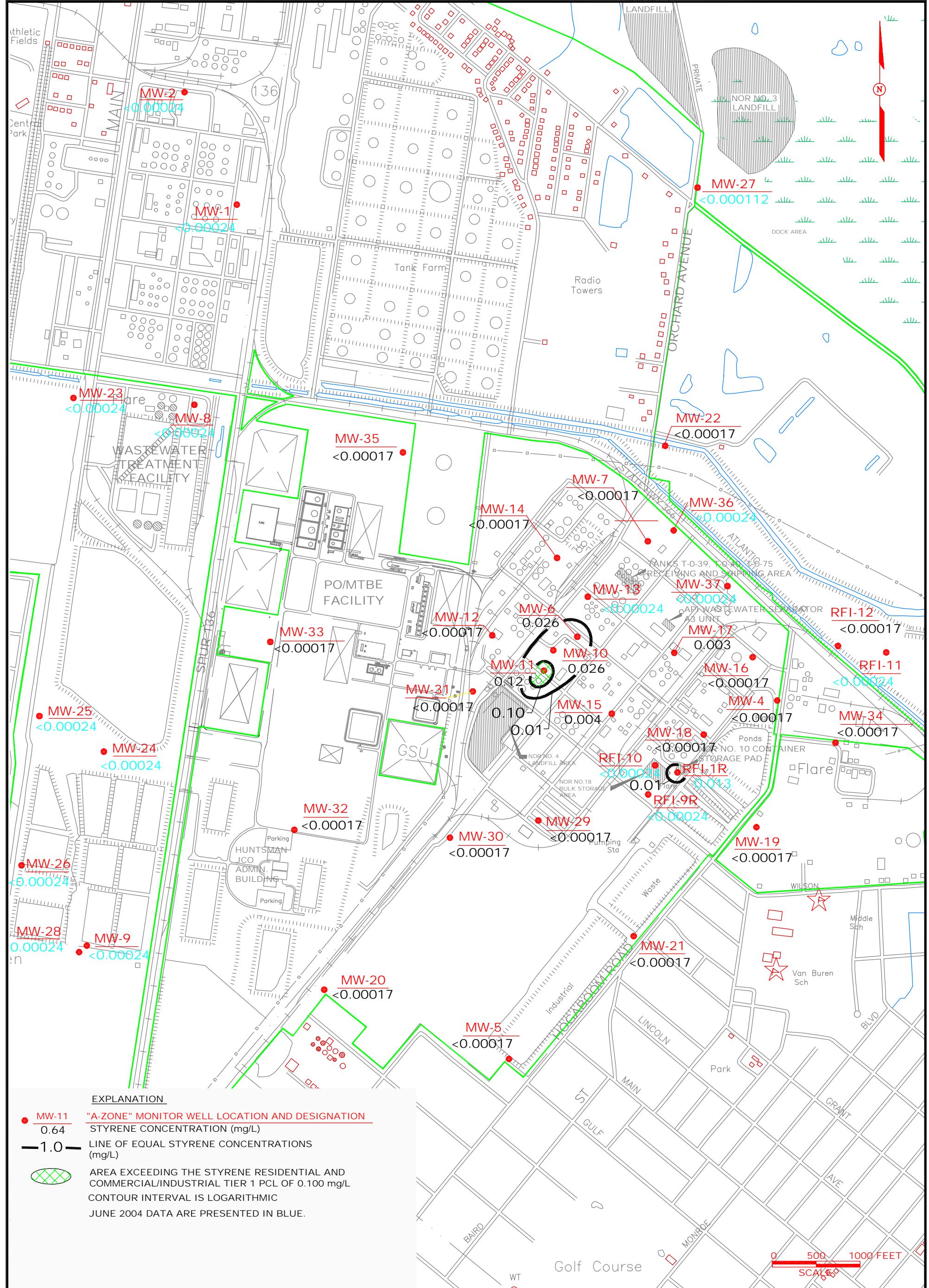
ARCADIS
10352 PLAZA AMERICANA DRIVE
BATON ROUGE, LA 70816
TEL: 225-292-1004
FAX: 225-218-9677
WWW.ARCADIS-US.COM

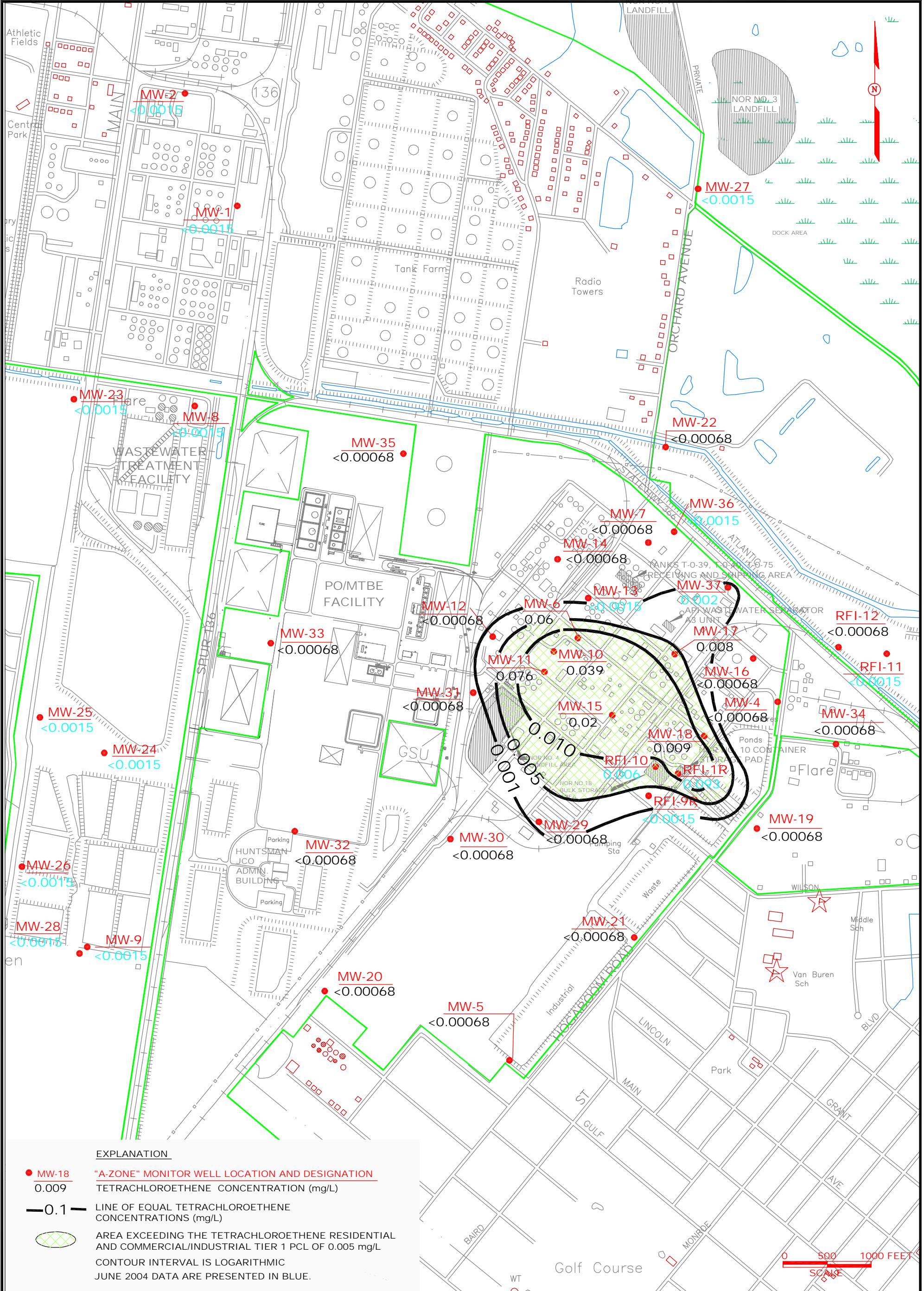
CHLOROBENZENE ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002 TASK-0002	15





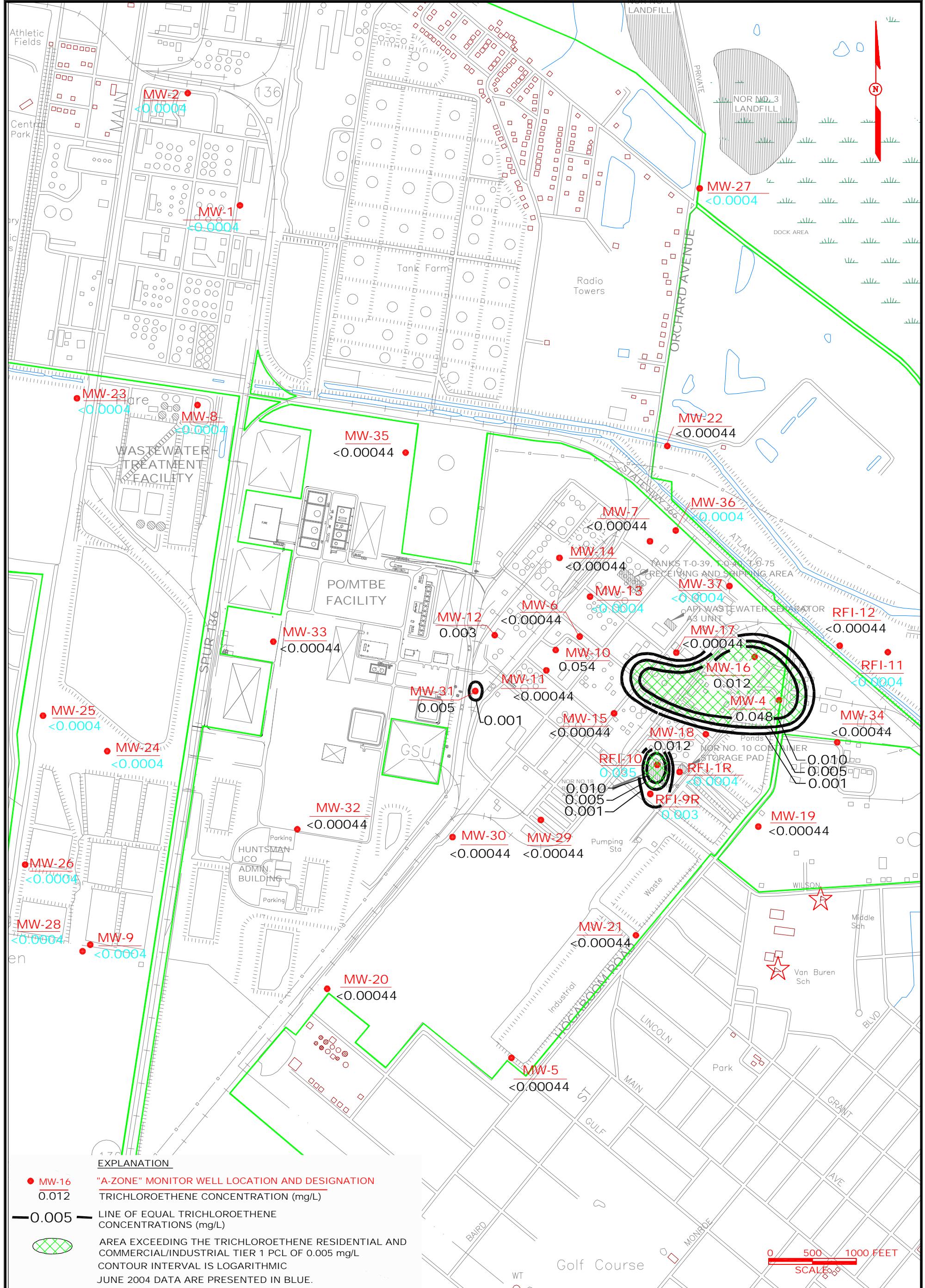


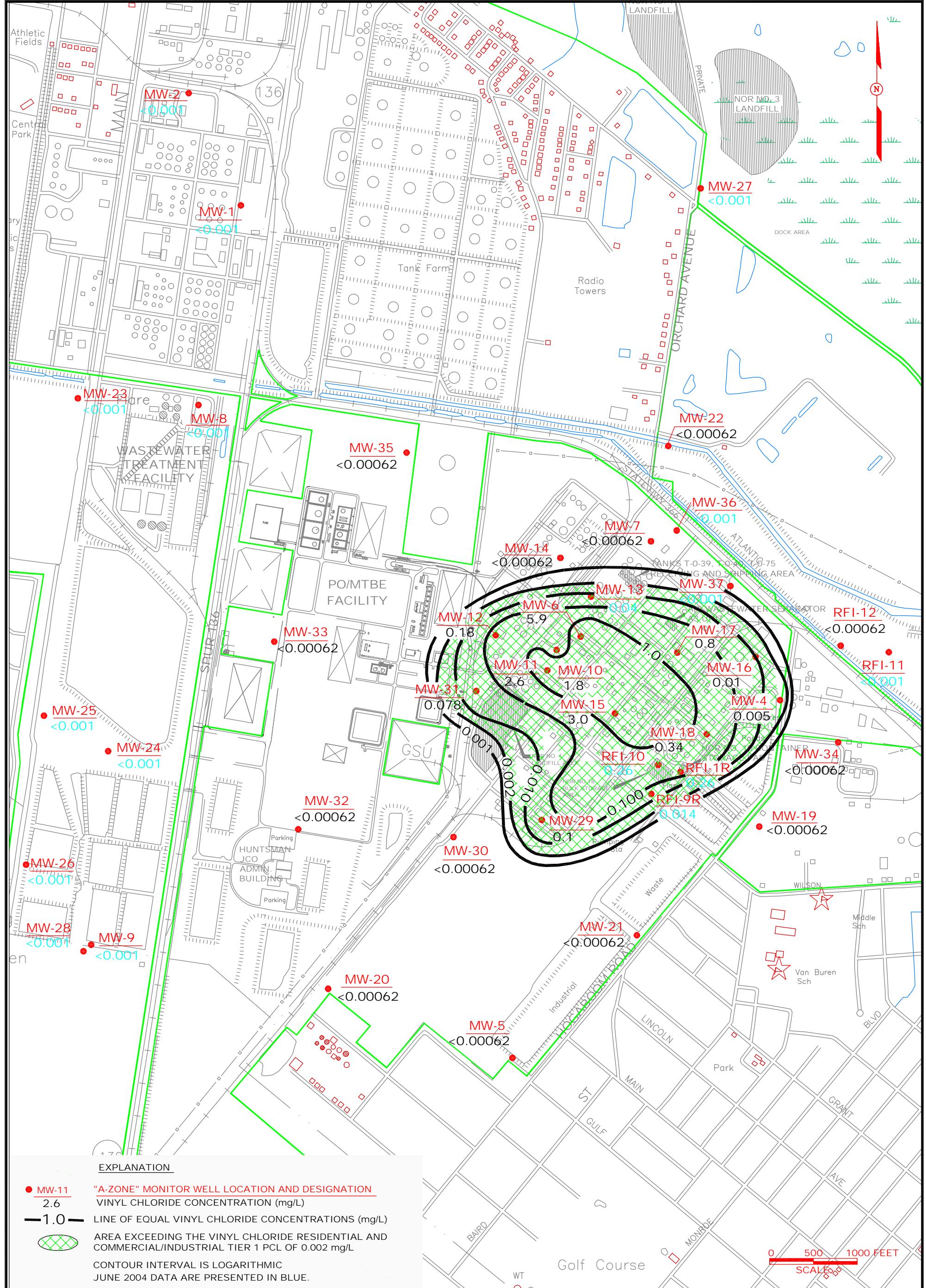
ARCADIS
10352 PLAZA AMERICANA DRIVE
BATON ROUGE, LA 70816
TEL: 225-292-1004
FAX: 225-218-9677
WWW.ARCADIS-US.COM

TETRACHLOROETHENE ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER: DRE	CHECKED BY: RJE
DRAWING NAME: 2689-02	CAD-FILE: 2689-02
DRAWN BY: SMEN	DATE: 7-24-07
PROJECT NUMBER: LA002689.0002 TASK-0002	DRAWING NUMBER: 18



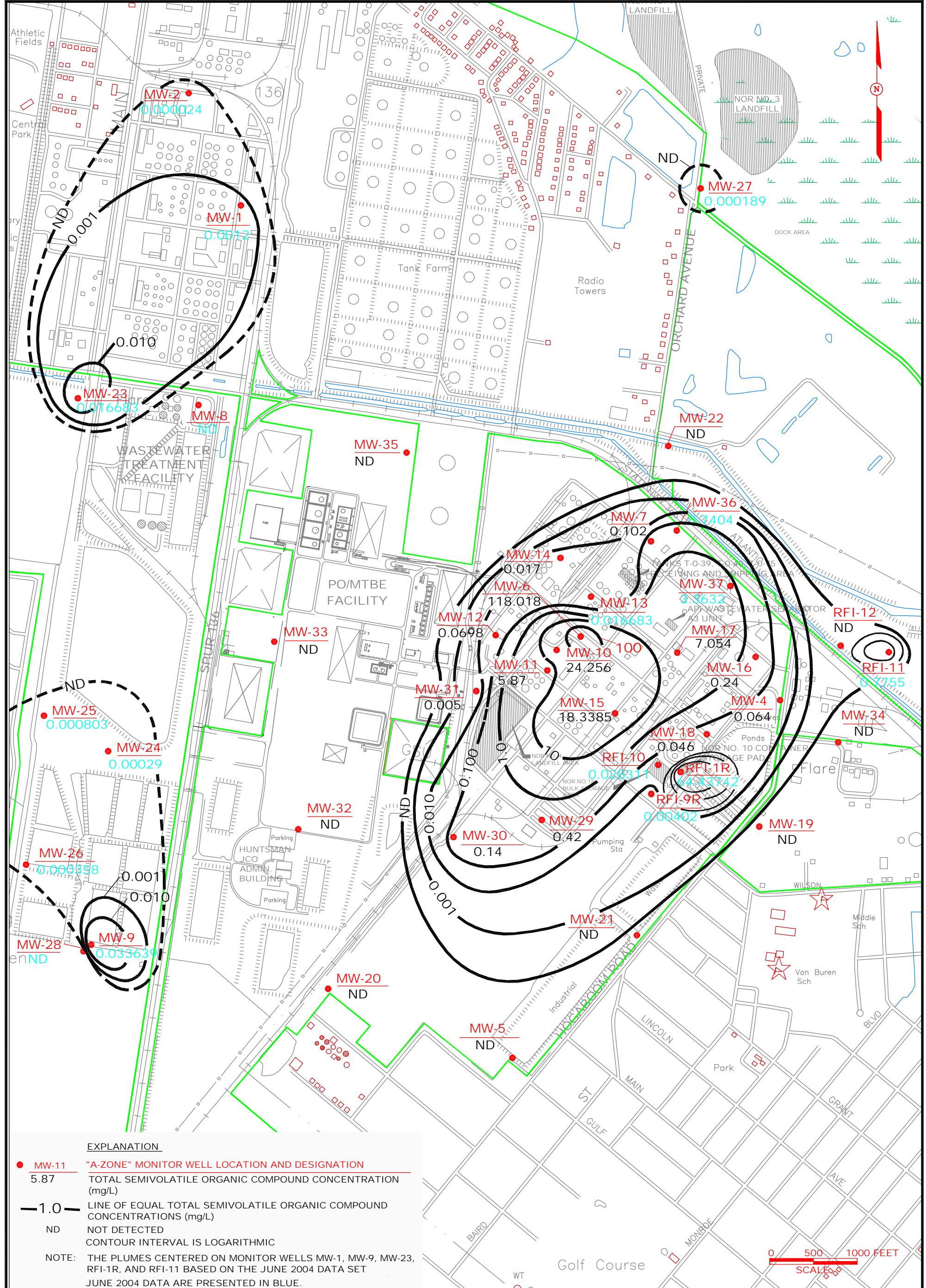


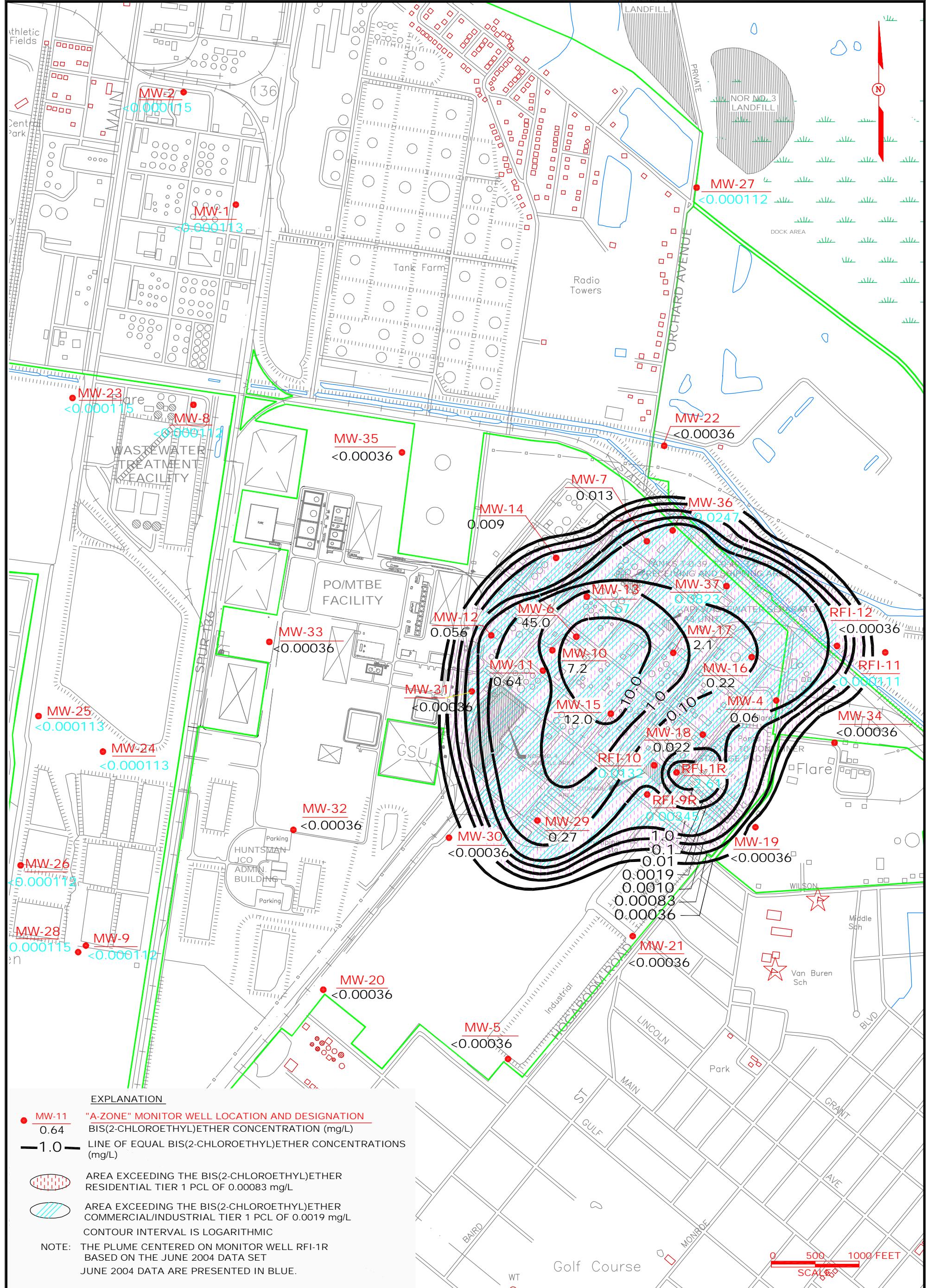
ARCADIS
10352 PLAZA AMERICANA DRIVE
BATON ROUGE, LA 70816
TEL: 225-292-1004
FAX: 225-218-9677
WWW.ARCADIS-US.COM

VINYL CHLORIDE ("A-ZONE") June 2007

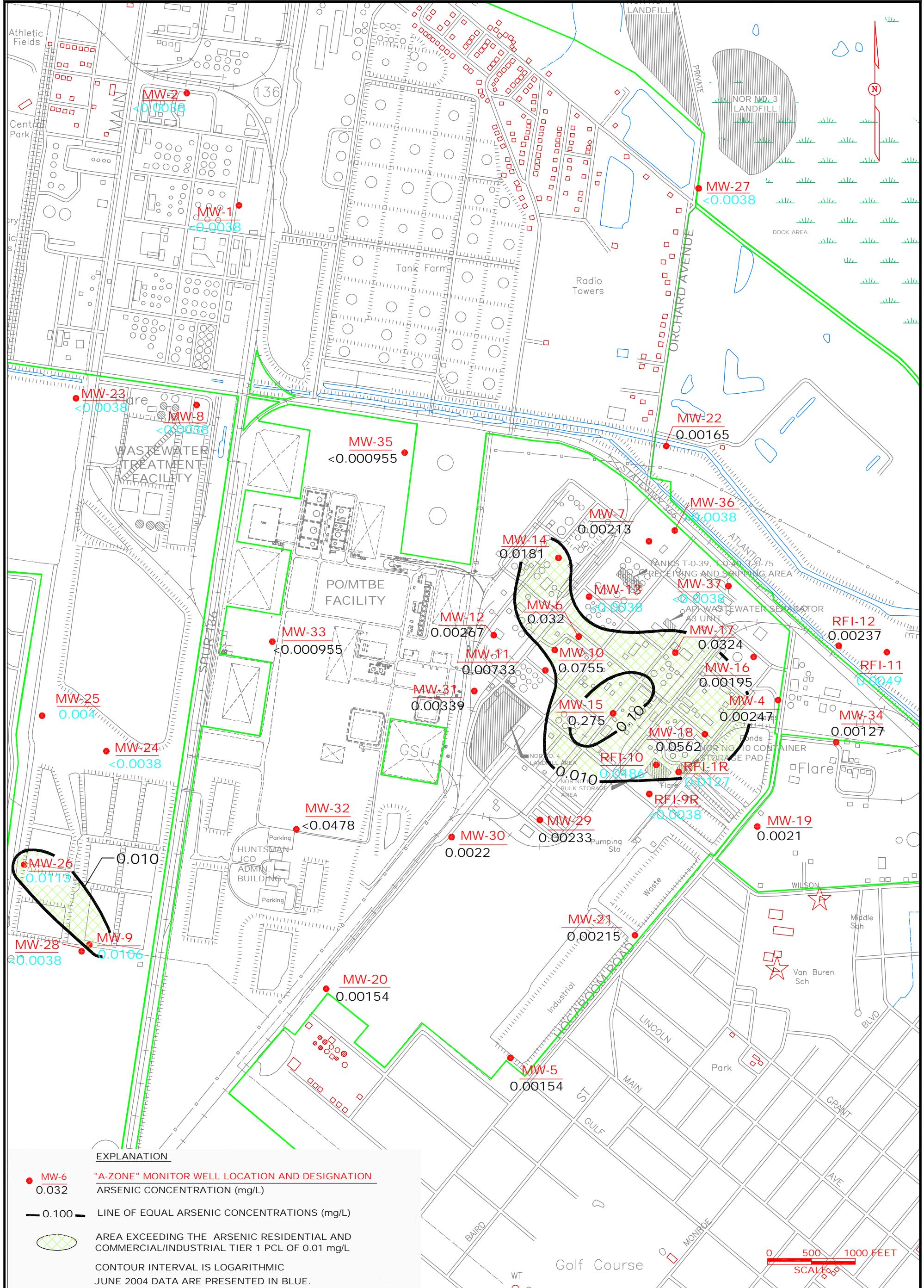
HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
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DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
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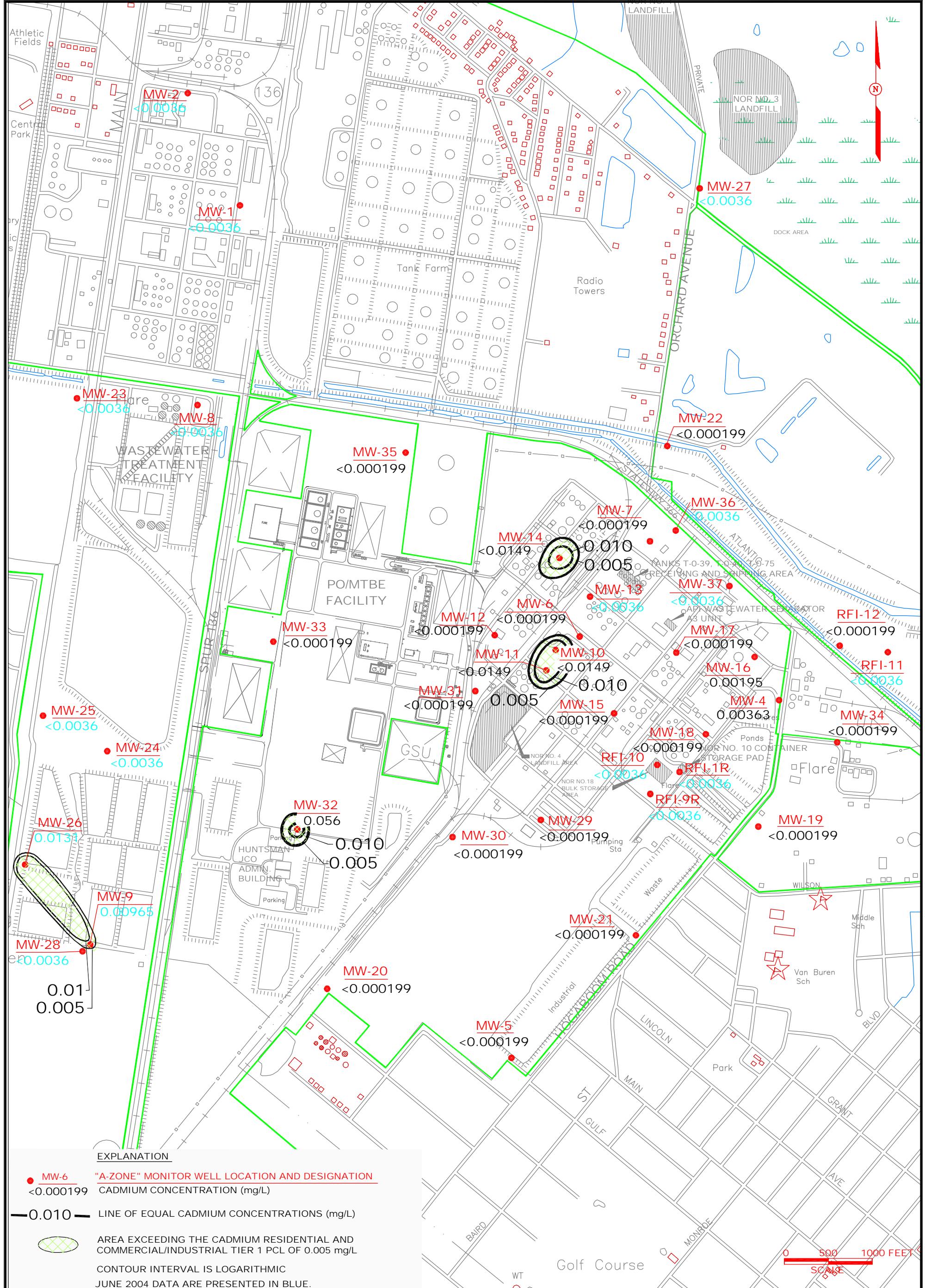


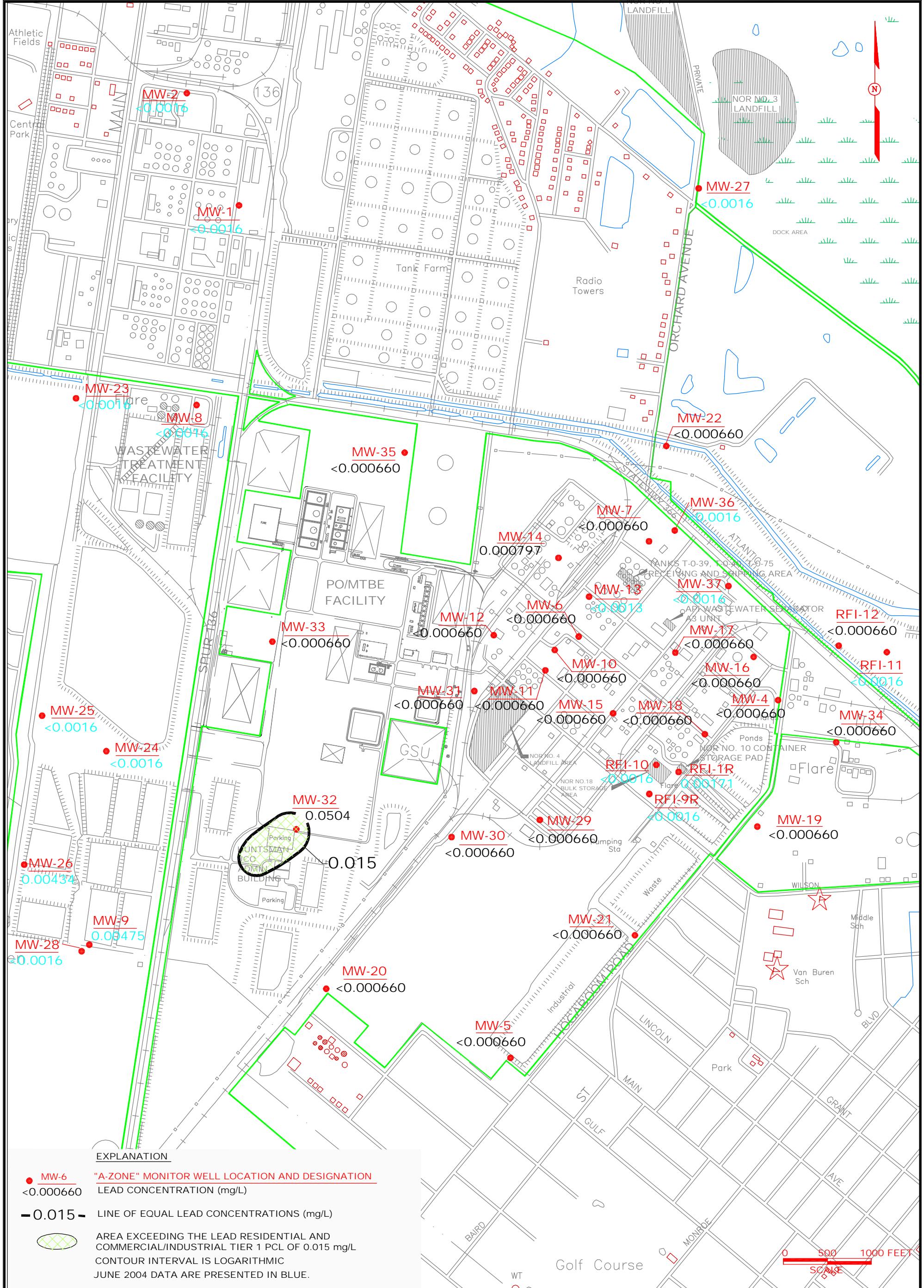


ARSENIC ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
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TASK-0002	

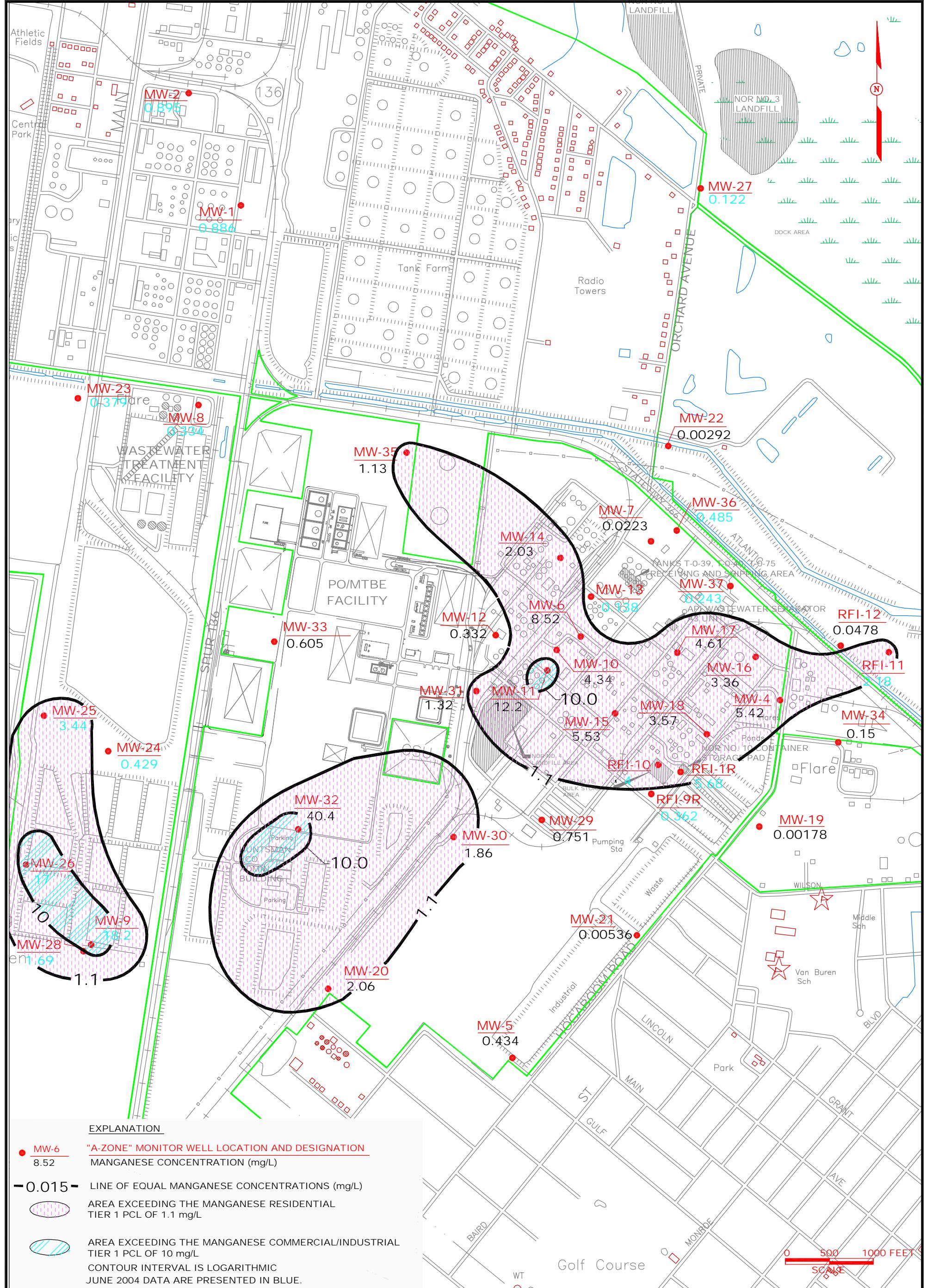


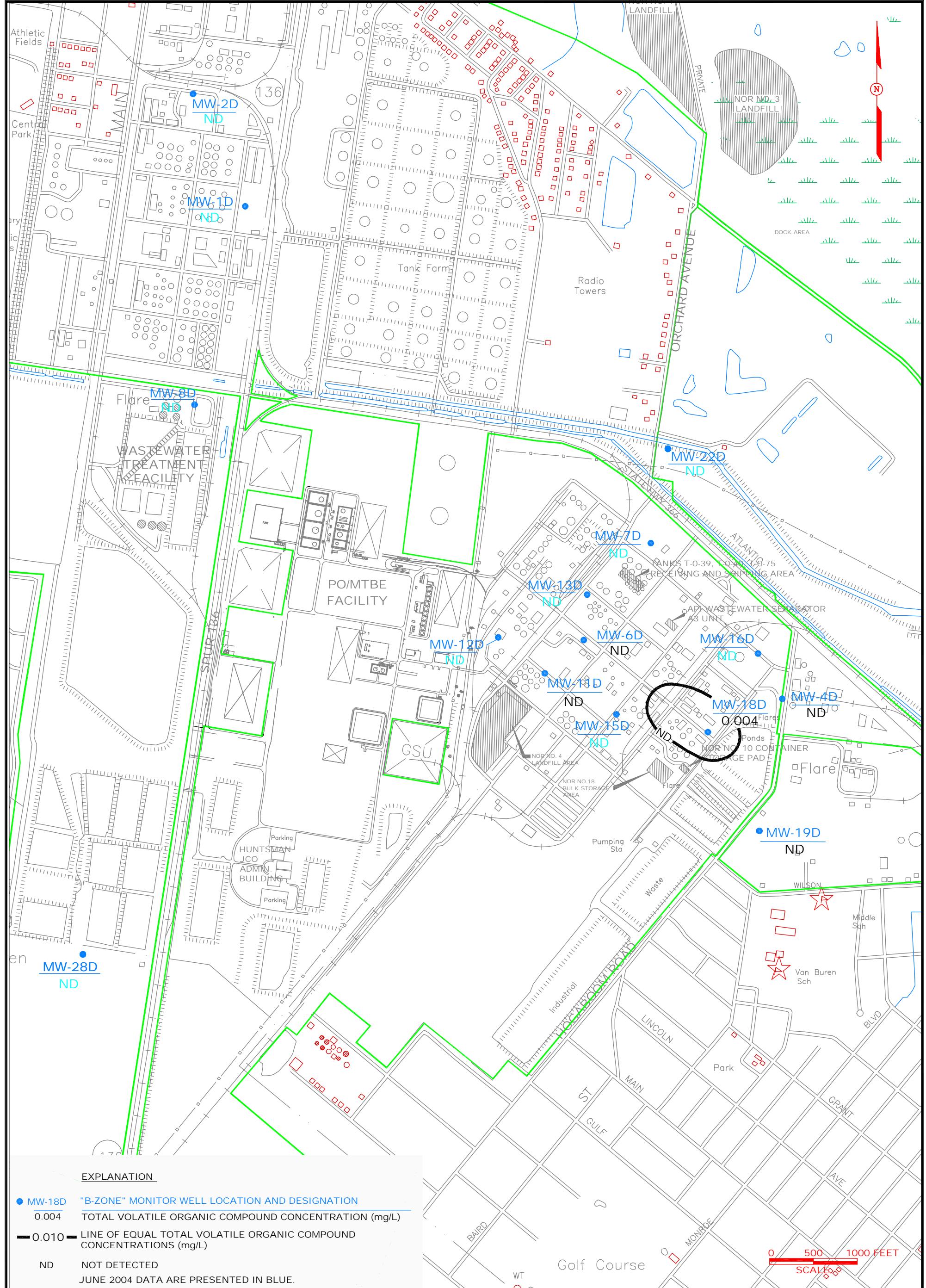


LEAD ("A-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

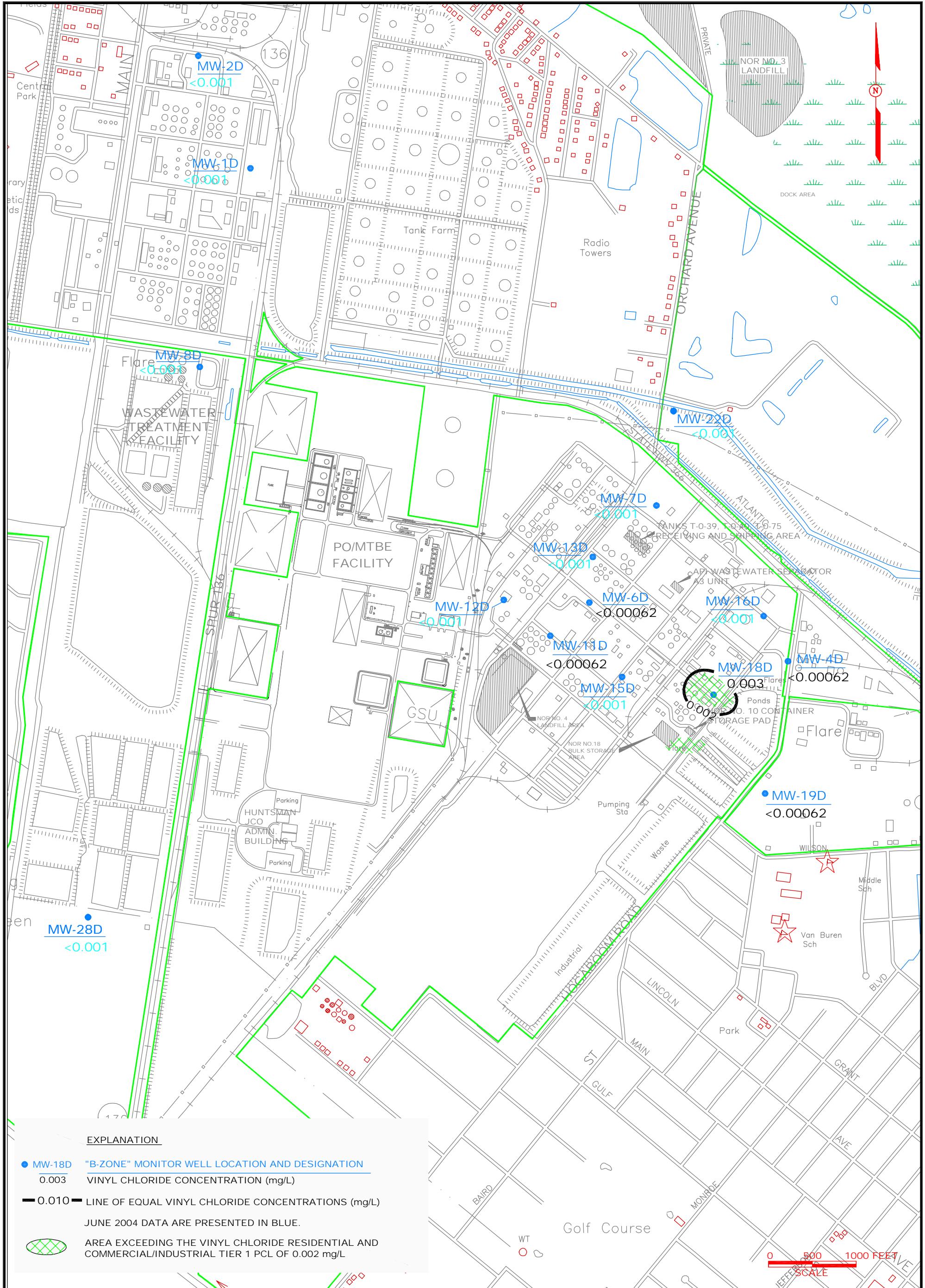
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TASK-0002	

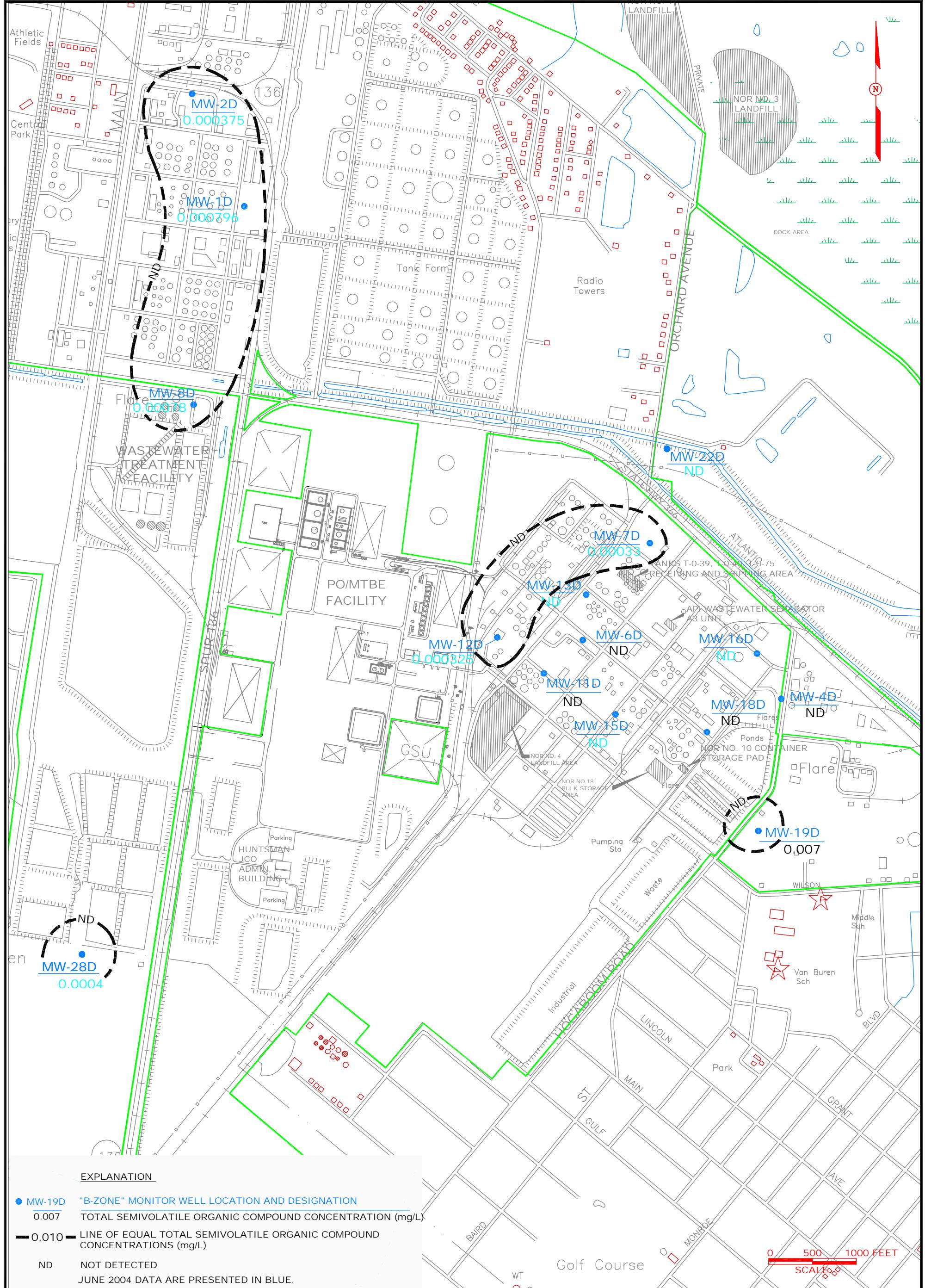




TOTAL VOLATILE ORGANIC COMPOUNDS ("B-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

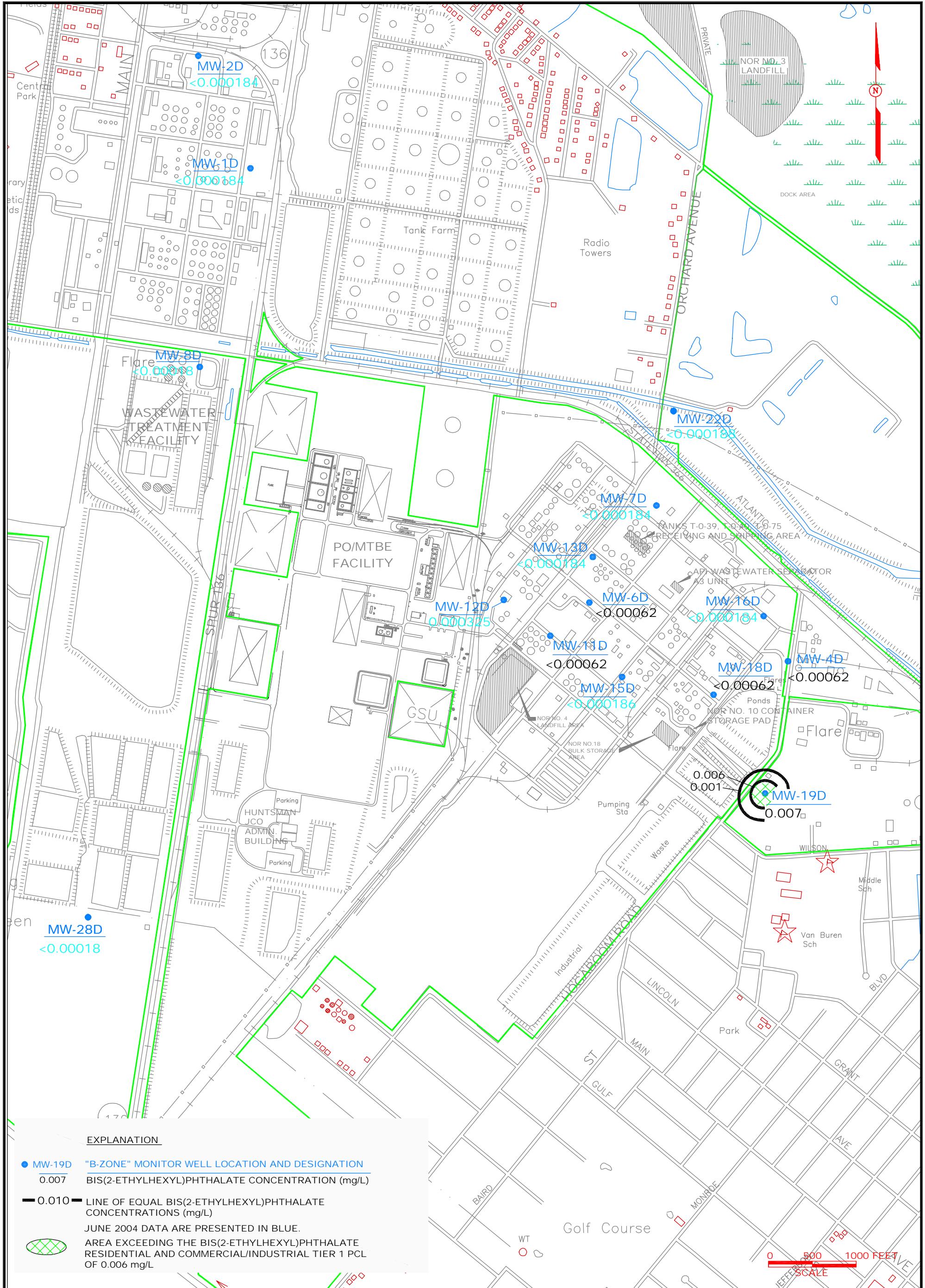




TOTAL SEMIVOLATILE ORGANIC COMPOUNDS ("B-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002	30
TASK-0002	



BIS(2-ETHYLHEXYL)PHTHALATE ("B-ZONE") June 2007

HUNTSMAN PETROCHEMICAL CORPORATION
Port Neches, Texas

PROJECT MANAGER:	CHECKED BY:
DRE	RJE
DRAWING NAME:	CAD-FILE:
2689-02	2689-02
DRAWN BY:	DATE:
SMEN	7-24-07
PROJECT NUMBER:	DRAWING NUMBER:
LA002689.0002	31
TASK-0002	

06081084 GROUNDWATER MULTI-INLET PIEZOMETER (MIP) DATA



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Certificate of Analysis Number:

06081084

Report To: ARCADIS Lance Fontenot 10352 Plaza Americana Drive Baton Rouge LA 70816- ph: (225) 292-1004 fax:	Project Name: Huntsman/LA002348 Site: Huntsman/LA002348 Site Address: PO Number: State: Texas State Cert. No.: T104704205-06-TX Date Reported: 9/12/2006
--	---

This Report Contains A Total Of 49 Pages

Excluding This Page, Chain Of Custody

And

Any Attachments

9/13/2006

Date

Test results meet all requirements of NELAC, unless specified in the narrative.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Case Narrative for:
Huntsman Petrochemical Corporation

Certificate of Analysis Number:

06081084

Report To: ARCADIS Lance Fontenot 10352 Plaza Americana Drive Baton Rouge LA 70816- ph: (225) 292-1004 fax:	Project Name: Huntsman/LA002348 Site: Huntsman/LA002348 Site Address: PO Number: State: Texas State Cert. No.: T104704205-06-TX Date Reported: 9/12/2006
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Two trip blanks were received with the samples but was not written on the chain of custody [SPL ID: 06081084-11 and -12]. Per our telephone conversation on August 28, 2006, SPL analyzed only one trip blank for Volatile Organics by SW846 bMethod 8260B.

Received broken one 40ml vial for sample ID "G-3B" for Volatile Organics by SW846 method 8260B. Two vials remain to perform analysis requested.

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report (" mg\kg-dry " or " ug\kg-dry ").

Matrix spike (MS) and matrix spike duplicate (MSD) samples are chosen and tested at random from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. Since the MS and MSD are chosen at random from an analytical batch, the sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The Laboratory Control Sample (LCS) and the Method Blank (MB) are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

Some of the percent recoveries and RPD's on the QC report for the MS/MSD may be different than the calculated recoveries and RPD's using the sample result and the MS/MSD results that appear on the report because, the actual raw result is used to perform the calculations for percent recovery and RPD.

Your sample ID "D-2" (SPL ID:06081084-01) was randomly selected for use in SPL's quality control program for the Total Metals analysis by SW846 Method 6020A. The MS recovery was outside of the advisable quality control limits for Antimony, Vanadium and Zinc (Batch ID:60048-I) due to matrix interference. A Post Digestion Spike (PDS) and Post Digestion Spike Duplicate (PDSD) was performed and all recoveries were within quality control limits. A Laboratory Control Sample (LCS) was analyzed as a quality control check for the analytical batch and all recoveries were within acceptable limits.

Any other exceptions associated with this report will be footnoted in the analytical result page(s) or the quality control summary page(s).

Please do not hesitate to contact us if you have any questions or comments pertaining to this data report. Please reference the above Certificate of Analysis Number.

This report shall not be reproduced except in full, without the written approval of the laboratory. The reported results are only representative of the samples submitted for testing.

SPL, Inc. is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Bernadette Fini

Customer Service Manager

06081084 Page 1

9/13/2006

Date

Test results meet all requirements of NELAC, unless specified in the narrative.



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Certificate of Analysis Number:

06081084

Report To: ARCADIS
Lance Fontenot
10352 Plaza Americana Drive

Baton Rouge
LA
70816-
ph: (225) 292-1004 fax: (225) 218-9677

Fax To:

Project Name: Huntsman/LA002348
Site: Huntsman/LA002348
Site Address:
PO Number:
State: Texas
State Cert. No.: T104704205-06-TX
Date Reported: 9/12/2006

Client Sample ID	Lab Sample ID	Matrix	Date Collected	Date Received	COC ID	HOLD
D-2	06081084-01	Water	8/24/2006 11:25:00 AM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
E-3	06081084-02	Water	8/24/2006 12:55:00 PM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
C-2	06081084-03	Water	8/24/2006 3:45:00 PM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
F-1	06081084-04	Water	8/24/2006 5:47:00 PM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
G-3	06081084-05	Water	8/25/2006 10:35:00 AM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
G-3B	06081084-06	Water	8/25/2006 11:00:00 AM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
G-2	06081084-07	Water	8/25/2006 12:35:00 PM	8/26/2006 10:00:00 AM		<input type="checkbox"/>
TRIP BLANK #1	06081084-11	Water	8/24/2006	8/26/2006 10:00:00 AM		<input type="checkbox"/>
TRIP BLANK #2	06081084-12	Water	8/24/2006	8/26/2006 10:00:00 AM		<input type="checkbox"/>

9/13/2006

Bernadette Fini
Customer Service Manager

Date

Joel Grice
Laboratory Director

Ted Yen
Quality Assurance Officer



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:D-2

Collected: 08/24/2006 11:25 SPL Sample ID: 06081084-01

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
-----------------	--------	------	-----------	-------------	---------------	---------	--------

MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
--	--	--	-----	---------	-------------

Mercury	ND		0.0002	1	09/02/06 15:41 T_H	3439773
---------	----	--	--------	---	--------------------	---------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

		MCL	SW7470A	Units: mg/L
--	--	-----	---------	-------------

Mercury	ND		0.0002	1	09/02/06 14:45 T_H	3439752
---------	----	--	--------	---	--------------------	---------

Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

		MCL	SW6020A	Units: mg/L
--	--	-----	---------	-------------

Antimony	ND	0.002	1	09/07/06 22:40 AL_H	3445789
Arsenic	0.00127	0.001	1	09/07/06 22:40 AL_H	3445789
Barium	1	0.001	1	09/07/06 22:40 AL_H	3445789
Beryllium	ND	0.001	1	09/07/06 22:40 AL_H	3445789
Cadmium	0.000518	0.0005	1	09/07/06 22:40 AL_H	3445789
Chromium	ND	0.001	1	09/07/06 22:40 AL_H	3445789
Cobalt	0.0415	0.001	1	09/07/06 22:40 AL_H	3445789
Lead	ND	0.001	1	09/07/06 22:40 AL_H	3445789
Manganese	2.22	0.001	1	09/07/06 22:40 AL_H	3445789
Nickel	0.178	0.001	1	09/07/06 22:40 AL_H	3445789
Selenium	ND	0.005	1	09/07/06 22:40 AL_H	3445789
Silver	ND	0.0005	1	09/07/06 22:40 AL_H	3445789
Vanadium	0.00177	0.001	1	09/07/06 22:40 AL_H	3445789
Zinc	0.0082	0.001	1	09/07/06 22:40 AL_H	3445789

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:D-2

Collected: 08/24/2006 11:25 SPL Sample ID: 06081084-01

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 0:06	AL_H	3445807
Arsenic	0.025		0.001	1	09/08/06 0:06	AL_H	3445807
Barium	1.25		0.001	1	09/08/06 0:06	AL_H	3445807
Beryllium	0.00167		0.001	1	09/08/06 0:06	AL_H	3445807
Cadmium	0.000885		0.0005	1	09/08/06 0:06	AL_H	3445807
Chromium	0.0296		0.001	1	09/08/06 0:06	AL_H	3445807
Cobalt	0.0801		0.001	1	09/08/06 0:06	AL_H	3445807
Lead	0.0214		0.001	1	09/08/06 0:06	AL_H	3445807
Manganese	2.74		0.001	1	09/08/06 0:06	AL_H	3445807
Nickel	0.22		0.001	1	09/08/06 0:06	AL_H	3445807
Selenium	ND		0.005	1	09/08/06 0:06	AL_H	3445807
Silver	ND		0.0005	1	09/08/06 0:06	AL_H	3445807
Vanadium	0.054		0.001	1	09/08/06 0:06	AL_H	3445807
Zinc	0.094		0.001	1	09/08/06 0:06	AL_H	3445807

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:D-2

Collected: 08/24/2006 11:25 SPL Sample ID: 06081084-01

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 16:52	S_G	3447836
1,3-Dichlorobenzene	ND		5	1	09/08/06 16:52	S_G	3447836
1,4-Dichlorobenzene	ND		5	1	09/08/06 16:52	S_G	3447836
1-Methylnaphthalene	ND		5	1	09/08/06 16:52	S_G	3447836
2,4-Dimethylphenol	ND		5	1	09/08/06 16:52	S_G	3447836
2,4-Dinitrophenol	ND		25	1	09/08/06 16:52	S_G	3447836
2-Methylnaphthalene	ND		5	1	09/08/06 16:52	S_G	3447836
4-Nitrophenol	ND		25	1	09/08/06 16:52	S_G	3447836
Acenaphthene	ND		5	1	09/08/06 16:52	S_G	3447836
Acenaphthylene	ND		5	1	09/08/06 16:52	S_G	3447836
Anthracene	ND		5	1	09/08/06 16:52	S_G	3447836
Benz(a)anthracene	ND		5	1	09/08/06 16:52	S_G	3447836
Benzo(a)pyrene	ND		5	1	09/08/06 16:52	S_G	3447836
Benzo(b)fluoranthene	ND		5	1	09/08/06 16:52	S_G	3447836
Benzo(g,h,i)perylene	ND		5	1	09/08/06 16:52	S_G	3447836
Benzo(k)fluoranthene	ND		5	1	09/08/06 16:52	S_G	3447836
Bis(2-chloroethyl)ether	ND		5	1	09/08/06 16:52	S_G	3447836
Bis(2-chloroisopropyl)ether	ND		5	1	09/08/06 16:52	S_G	3447836
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 16:52	S_G	3447836
Chrysene	ND		5	1	09/08/06 16:52	S_G	3447836
Dibenz(a,h)acridine	ND		25	1	09/08/06 16:52	S_G	3447836
Dibenz(a,h)anthracene	ND		5	1	09/08/06 16:52	S_G	3447836
Diethyl phthalate	ND		5	1	09/08/06 16:52	S_G	3447836
Dimethyl phthalate	ND		5	1	09/08/06 16:52	S_G	3447836
Di-n-butyl phthalate	ND		5	1	09/08/06 16:52	S_G	3447836
Fluoranthene	ND		5	1	09/08/06 16:52	S_G	3447836
Fluorene	ND		5	1	09/08/06 16:52	S_G	3447836
Indene	ND		50	1	09/08/06 16:52	S_G	3447836
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 16:52	S_G	3447836
Naphthalene	ND		5	1	09/08/06 16:52	S_G	3447836
Phenanthrene	ND		5	1	09/08/06 16:52	S_G	3447836
Phenol	ND		5	1	09/08/06 16:52	S_G	3447836
Pyrene	ND		5	1	09/08/06 16:52	S_G	3447836
Pyridine	ND		5	1	09/08/06 16:52	S_G	3447836
Quinoline	ND		50	1	09/08/06 16:52	S_G	3447836
Thiophenol	ND		50	1	09/08/06 16:52	S_G	3447836
2-Methylphenol	ND		5	1	09/08/06 16:52	S_G	3447836
3 & 4-Methylphenol	ND		5	1	09/08/06 16:52	S_G	3447836
Surr: 2,4,6-Tribromophenol	69.3	%	10-123	1	09/08/06 16:52	S_G	3447836
Surr: 2-Fluorobiphenyl	90.0	%	23-116	1	09/08/06 16:52	S_G	3447836

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:D-2 Collected: 08/24/2006 11:25 SPL Sample ID: 06081084-01

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	49.3	%	16-110	1	09/08/06 16:52	S_G	3447836
Surr: Nitrobenzene-d5	80.0	%	21-114	1	09/08/06 16:52	S_G	3447836
Surr: Phenol-d5	37.3	%	10-110	1	09/08/06 16:52	S_G	3447836
Surr: Terphenyl-d14	92.0	%	22-141	1	09/08/06 16:52	S_G	3447836

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L	
1,1,1-Trichloroethane	ND	5	1	08/28/06 16:41	LT
1,1,2-Trichloroethane	ND	5	1	08/28/06 16:41	LT
1,1-Dichloroethane	ND	5	1	08/28/06 16:41	LT
1,1-Dichloroethene	ND	5	1	08/28/06 16:41	LT
1,2,3-Trichloropropane	ND	5	1	08/28/06 16:41	LT
1,2-Dibromoethane	ND	5	1	08/28/06 16:41	LT
1,2-Dichloroethane	ND	5	1	08/28/06 16:41	LT
1,2-Dichloropropane	ND	5	1	08/28/06 16:41	LT
1,4-Dioxane	ND	200	1	08/28/06 16:41	LT
2-Butanone	ND	10	1	08/28/06 16:41	LT
Benzene	ND	5	1	08/28/06 16:41	LT
Carbon disulfide	ND	5	1	08/28/06 16:41	LT
Chlorobenzene	ND	5	1	08/28/06 16:41	LT
Chloroethane	ND	5	1	08/28/06 16:41	LT
Chloroform	ND	5	1	08/28/06 16:41	LT
Ethylbenzene	ND	5	1	08/28/06 16:41	LT
Methyl tert-butyl ether	ND	5	1	08/28/06 16:41	LT
Styrene	ND	5	1	08/28/06 16:41	LT
Tetrachloroethene	ND	5	1	08/28/06 16:41	LT
Toluene	ND	5	1	08/28/06 16:41	LT
Trichloroethene	ND	5	1	08/28/06 16:41	LT
Vinyl chloride	ND	2	1	08/28/06 16:41	LT
m,p-Xylene	ND	5	1	08/28/06 16:41	LT
o-Xylene	ND	5	1	08/28/06 16:41	LT
1,2-Dichloroethene (total)	ND	5	1	08/28/06 16:41	LT
Xylenes, Total	ND	5	1	08/28/06 16:41	LT
Surr: 1,2-Dichloroethane-d4	92.0	%	62-130	1	08/28/06 16:41
Surr: 4-Bromofluorobenzene	96.0	%	70-130	1	08/28/06 16:41
Surr: Toluene-d8	104	%	74-122	1	08/28/06 16:41

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:E-3

Collected: 08/24/2006 12:55 SPL Sample ID: 06081084-02

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:45 T_H	3439774
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

		MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 14:48 T_H	3439753
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

	MCL	SW6020A	Units: mg/L
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Antimony	0.00895	0.002	1	09/07/06 23:18 AL_H	3445797
Arsenic	0.00339	0.001	1	09/07/06 23:18 AL_H	3445797
Barium	0.261	0.001	1	09/07/06 23:18 AL_H	3445797
Beryllium	ND	0.001	1	09/07/06 23:18 AL_H	3445797
Cadmium	ND	0.0005	1	09/07/06 23:18 AL_H	3445797
Chromium	ND	0.001	1	09/07/06 23:18 AL_H	3445797
Cobalt	ND	0.001	1	09/07/06 23:18 AL_H	3445797
Lead	ND	0.001	1	09/07/06 23:18 AL_H	3445797
Manganese	0.804	0.001	1	09/07/06 23:18 AL_H	3445797
Nickel	0.00211	0.001	1	09/07/06 23:18 AL_H	3445797
Selenium	ND	0.005	1	09/07/06 23:18 AL_H	3445797
Silver	ND	0.0005	1	09/07/06 23:18 AL_H	3445797
Vanadium	0.0014	0.001	1	09/07/06 23:18 AL_H	3445797
Zinc	0.00549	0.001	1	09/07/06 23:18 AL_H	3445797

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:E-3

Collected: 08/24/2006 12:55 SPL Sample ID: 06081084-02

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 0:44	AL_H	3445826
Arsenic	0.02		0.001	1	09/08/06 0:44	AL_H	3445826
Barium	0.565		0.001	1	09/08/06 0:44	AL_H	3445826
Beryllium	0.00209		0.001	1	09/08/06 0:44	AL_H	3445826
Cadmium	0.000585		0.0005	1	09/08/06 0:44	AL_H	3445826
Chromium	0.0659		0.001	1	09/08/06 0:44	AL_H	3445826
Cobalt	0.0257		0.001	1	09/08/06 0:44	AL_H	3445826
Lead	0.0392		0.001	1	09/08/06 0:44	AL_H	3445826
Manganese	2.08		0.001	1	09/08/06 0:44	AL_H	3445826
Nickel	0.0593		0.001	1	09/08/06 0:44	AL_H	3445826
Selenium	ND		0.005	1	09/08/06 0:44	AL_H	3445826
Silver	ND		0.0005	1	09/08/06 0:44	AL_H	3445826
Vanadium	0.0893		0.001	1	09/08/06 0:44	AL_H	3445826
Zinc	0.161		0.001	1	09/08/06 0:44	AL_H	3445826

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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9/13/2006 8:43:14 AM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:E-3

Collected: 08/24/2006 12:55 SPL Sample ID: 06081084-02

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 17:31	S_G	3447837
1,3-Dichlorobenzene	ND		5	1	09/08/06 17:31	S_G	3447837
1,4-Dichlorobenzene	ND		5	1	09/08/06 17:31	S_G	3447837
1-Methylnaphthalene	ND		5	1	09/08/06 17:31	S_G	3447837
2,4-Dimethylphenol	ND		5	1	09/08/06 17:31	S_G	3447837
2,4-Dinitrophenol	ND		25	1	09/08/06 17:31	S_G	3447837
2-Methylnaphthalene	ND		5	1	09/08/06 17:31	S_G	3447837
4-Nitrophenol	ND		25	1	09/08/06 17:31	S_G	3447837
Acenaphthene	ND		5	1	09/08/06 17:31	S_G	3447837
Acenaphthylene	ND		5	1	09/08/06 17:31	S_G	3447837
Anthracene	ND		5	1	09/08/06 17:31	S_G	3447837
Benz(a)anthracene	ND		5	1	09/08/06 17:31	S_G	3447837
Benzo(a)pyrene	ND		5	1	09/08/06 17:31	S_G	3447837
Benzo(b)fluoranthene	ND		5	1	09/08/06 17:31	S_G	3447837
Benzo(g,h,i)perylene	ND		5	1	09/08/06 17:31	S_G	3447837
Benzo(k)fluoranthene	ND		5	1	09/08/06 17:31	S_G	3447837
Bis(2-chloroethyl)ether	ND		5	1	09/08/06 17:31	S_G	3447837
Bis(2-chloroisopropyl)ether	ND		5	1	09/08/06 17:31	S_G	3447837
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 17:31	S_G	3447837
Chrysene	ND		5	1	09/08/06 17:31	S_G	3447837
Dibenz(a,h)acridine	ND		25	1	09/08/06 17:31	S_G	3447837
Dibenz(a,h)anthracene	ND		5	1	09/08/06 17:31	S_G	3447837
Diethyl phthalate	ND		5	1	09/08/06 17:31	S_G	3447837
Dimethyl phthalate	ND		5	1	09/08/06 17:31	S_G	3447837
Di-n-butyl phthalate	ND		5	1	09/08/06 17:31	S_G	3447837
Fluoranthene	ND		5	1	09/08/06 17:31	S_G	3447837
Fluorene	ND		5	1	09/08/06 17:31	S_G	3447837
Indene	ND		50	1	09/08/06 17:31	S_G	3447837
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 17:31	S_G	3447837
Naphthalene	ND		5	1	09/08/06 17:31	S_G	3447837
Phenanthrene	ND		5	1	09/08/06 17:31	S_G	3447837
Phenol	ND		5	1	09/08/06 17:31	S_G	3447837
Pyrene	ND		5	1	09/08/06 17:31	S_G	3447837
Pyridine	ND		5	1	09/08/06 17:31	S_G	3447837
Quinoline	ND		50	1	09/08/06 17:31	S_G	3447837
Thiophenol	ND		50	1	09/08/06 17:31	S_G	3447837
2-Methylphenol	ND		5	1	09/08/06 17:31	S_G	3447837
3 & 4-Methylphenol	ND		5	1	09/08/06 17:31	S_G	3447837
Surr: 2,4,6-Tribromophenol	65.3	%	10-123	1	09/08/06 17:31	S_G	3447837
Surr: 2-Fluorobiphenyl	82.0	%	23-116	1	09/08/06 17:31	S_G	3447837

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:E-3

Collected: 08/24/2006 12:55 SPL Sample ID: 06081084-02

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	45.3	%	16-110	1	09/08/06 17:31	S_G	3447837
Surr: Nitrobenzene-d5	74.0	%	21-114	1	09/08/06 17:31	S_G	3447837
Surr: Phenol-d5	32.0	%	10-110	1	09/08/06 17:31	S_G	3447837
Surr: Terphenyl-d14	92.0	%	22-141	1	09/08/06 17:31	S_G	3447837

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L			
1,1,1-Trichloroethane	ND	5	1	08/28/06 19:01	LT		
1,1,2-Trichloroethane	ND	5	1	08/28/06 19:01	LT		
1,1-Dichloroethane	ND	5	1	08/28/06 19:01	LT		
1,1-Dichloroethene	ND	5	1	08/28/06 19:01	LT		
1,2,3-Trichloropropane	ND	5	1	08/28/06 19:01	LT		
1,2-Dibromoethane	ND	5	1	08/28/06 19:01	LT		
1,2-Dichloroethane	ND	5	1	08/28/06 19:01	LT		
1,2-Dichloropropane	ND	5	1	08/28/06 19:01	LT		
1,4-Dioxane	ND	200	1	08/28/06 19:01	LT		
2-Butanone	ND	10	1	08/28/06 19:01	LT		
Benzene	ND	5	1	08/28/06 19:01	LT		
Carbon disulfide	ND	5	1	08/28/06 19:01	LT		
Chlorobenzene	ND	5	1	08/28/06 19:01	LT		
Chloroethane	ND	5	1	08/28/06 19:01	LT		
Chloroform	ND	5	1	08/28/06 19:01	LT		
Ethylbenzene	ND	5	1	08/28/06 19:01	LT		
Methyl tert-butyl ether	ND	5	1	08/28/06 19:01	LT		
Styrene	ND	5	1	08/28/06 19:01	LT		
Tetrachloroethene	ND	5	1	08/28/06 19:01	LT		
Toluene	ND	5	1	08/28/06 19:01	LT		
Trichloroethene	ND	5	1	08/28/06 19:01	LT		
Vinyl chloride	ND	2	1	08/28/06 19:01	LT		
m,p-Xylene	ND	5	1	08/28/06 19:01	LT		
o-Xylene	ND	5	1	08/28/06 19:01	LT		
1,2-Dichloroethene (total)	ND	5	1	08/28/06 19:01	LT		
Xylenes, Total	ND	5	1	08/28/06 19:01	LT		
Surr: 1,2-Dichloroethane-d4	96.0	%	62-130	1	08/28/06 19:01	LT	3432033
Surr: 4-Bromofluorobenzene	100	%	70-130	1	08/28/06 19:01	LT	3432033
Surr: Toluene-d8	104	%	74-122	1	08/28/06 19:01	LT	3432033

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:C-2

Collected: 08/24/2006 15:45 SPL Sample ID: 06081084-03

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:34 T_H	3439770
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

		MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 14:50 T_H	3439754
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

		MCL	SW6020A	Units: mg/L
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Antimony	ND	0.002	1	09/07/06 23:23 AL_H	3445798
Arsenic	ND	0.001	1	09/07/06 23:23 AL_H	3445798
Barium	0.244	0.001	1	09/07/06 23:23 AL_H	3445798
Beryllium	ND	0.001	1	09/07/06 23:23 AL_H	3445798
Cadmium	ND	0.0005	1	09/07/06 23:23 AL_H	3445798
Chromium	ND	0.001	1	09/07/06 23:23 AL_H	3445798
Cobalt	0.00114	0.001	1	09/07/06 23:23 AL_H	3445798
Lead	ND	0.001	1	09/07/06 23:23 AL_H	3445798
Manganese	0.202	0.001	1	09/07/06 23:23 AL_H	3445798
Nickel	0.00323	0.001	1	09/07/06 23:23 AL_H	3445798
Selenium	ND	0.005	1	09/07/06 23:23 AL_H	3445798
Silver	ND	0.0005	1	09/07/06 23:23 AL_H	3445798
Vanadium	0.00113	0.001	1	09/07/06 23:23 AL_H	3445798
Zinc	0.00718	0.001	1	09/07/06 23:23 AL_H	3445798

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:C-2

Collected: 08/24/2006 15:45 SPL Sample ID: 06081084-03

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 0:49	AL_H	3445827
Arsenic	0.0152		0.001	1	09/08/06 0:49	AL_H	3445827
Barium	0.96		0.001	1	09/08/06 0:49	AL_H	3445827
Beryllium	0.00397		0.001	1	09/08/06 0:49	AL_H	3445827
Cadmium	0.00136		0.0005	1	09/08/06 0:49	AL_H	3445827
Chromium	0.0941		0.001	1	09/08/06 0:49	AL_H	3445827
Cobalt	0.0348		0.001	1	09/08/06 0:49	AL_H	3445827
Lead	0.0523		0.001	1	09/08/06 0:49	AL_H	3445827
Manganese	2.03		0.001	1	09/08/06 0:49	AL_H	3445827
Nickel	0.0898		0.001	1	09/08/06 0:49	AL_H	3445827
Selenium	ND		0.005	1	09/08/06 0:49	AL_H	3445827
Silver	ND		0.0005	1	09/08/06 0:49	AL_H	3445827
Vanadium	0.115		0.001	1	09/08/06 0:49	AL_H	3445827
Zinc	0.276		0.001	1	09/08/06 0:49	AL_H	3445827

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:C-2

Collected: 08/24/2006 15:45 SPL Sample ID: 06081084-03

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 18:09	S_G	3447838
1,3-Dichlorobenzene	ND		5	1	09/08/06 18:09	S_G	3447838
1,4-Dichlorobenzene	ND		5	1	09/08/06 18:09	S_G	3447838
1-Methylnaphthalene	ND		5	1	09/08/06 18:09	S_G	3447838
2,4-Dimethylphenol	ND		5	1	09/08/06 18:09	S_G	3447838
2,4-Dinitrophenol	ND		25	1	09/08/06 18:09	S_G	3447838
2-Methylnaphthalene	ND		5	1	09/08/06 18:09	S_G	3447838
4-Nitrophenol	ND		25	1	09/08/06 18:09	S_G	3447838
Acenaphthene	ND		5	1	09/08/06 18:09	S_G	3447838
Acenaphthylene	ND		5	1	09/08/06 18:09	S_G	3447838
Anthracene	ND		5	1	09/08/06 18:09	S_G	3447838
Benz(a)anthracene	ND		5	1	09/08/06 18:09	S_G	3447838
Benzo(a)pyrene	ND		5	1	09/08/06 18:09	S_G	3447838
Benzo(b)fluoranthene	ND		5	1	09/08/06 18:09	S_G	3447838
Benzo(g,h,i)perylene	ND		5	1	09/08/06 18:09	S_G	3447838
Benzo(k)fluoranthene	ND		5	1	09/08/06 18:09	S_G	3447838
Bis(2-chloroethyl)ether	12		5	1	09/08/06 18:09	S_G	3447838
Bis(2-chloroisopropyl)ether	ND		5	1	09/08/06 18:09	S_G	3447838
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 18:09	S_G	3447838
Chrysene	ND		5	1	09/08/06 18:09	S_G	3447838
Dibenz(a,h)acridine	ND		25	1	09/08/06 18:09	S_G	3447838
Dibenz(a,h)anthracene	ND		5	1	09/08/06 18:09	S_G	3447838
Diethyl phthalate	ND		5	1	09/08/06 18:09	S_G	3447838
Dimethyl phthalate	ND		5	1	09/08/06 18:09	S_G	3447838
Di-n-butyl phthalate	ND		5	1	09/08/06 18:09	S_G	3447838
Fluoranthene	ND		5	1	09/08/06 18:09	S_G	3447838
Fluorene	ND		5	1	09/08/06 18:09	S_G	3447838
Indene	ND		50	1	09/08/06 18:09	S_G	3447838
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 18:09	S_G	3447838
Naphthalene	ND		5	1	09/08/06 18:09	S_G	3447838
Phenanthrene	ND		5	1	09/08/06 18:09	S_G	3447838
Phenol	ND		5	1	09/08/06 18:09	S_G	3447838
Pyrene	ND		5	1	09/08/06 18:09	S_G	3447838
Pyridine	ND		5	1	09/08/06 18:09	S_G	3447838
Quinoline	ND		50	1	09/08/06 18:09	S_G	3447838
Thiophenol	ND		50	1	09/08/06 18:09	S_G	3447838
2-Methylphenol	ND		5	1	09/08/06 18:09	S_G	3447838
3 & 4-Methylphenol	ND		5	1	09/08/06 18:09	S_G	3447838
Surr: 2,4,6-Tribromophenol	65.3	%	10-123	1	09/08/06 18:09	S_G	3447838
Surr: 2-Fluorobiphenyl	84.0	%	23-116	1	09/08/06 18:09	S_G	3447838

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:C-2

Collected: 08/24/2006 15:45 SPL Sample ID: 06081084-03

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	46.7	%	16-110	1	09/08/06 18:09	S_G	3447838
Surr: Nitrobenzene-d5	74.0	%	21-114	1	09/08/06 18:09	S_G	3447838
Surr: Phenol-d5	33.3	%	10-110	1	09/08/06 18:09	S_G	3447838
Surr: Terphenyl-d14	92.0	%	22-141	1	09/08/06 18:09	S_G	3447838

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L			
1,1,1-Trichloroethane	ND	5	1	08/28/06 19:29	LT		
1,1,2-Trichloroethane	ND	5	1	08/28/06 19:29	LT		
1,1-Dichloroethane	ND	5	1	08/28/06 19:29	LT		
1,1-Dichloroethene	ND	5	1	08/28/06 19:29	LT		
1,2,3-Trichloropropane	ND	5	1	08/28/06 19:29	LT		
1,2-Dibromoethane	ND	5	1	08/28/06 19:29	LT		
1,2-Dichloroethane	16	5	1	08/28/06 19:29	LT		
1,2-Dichloropropane	ND	5	1	08/28/06 19:29	LT		
1,4-Dioxane	ND	200	1	08/28/06 19:29	LT		
2-Butanone	ND	10	1	08/28/06 19:29	LT		
Benzene	ND	5	1	08/28/06 19:29	LT		
Carbon disulfide	ND	5	1	08/28/06 19:29	LT		
Chlorobenzene	ND	5	1	08/28/06 19:29	LT		
Chloroethane	ND	5	1	08/28/06 19:29	LT		
Chloroform	ND	5	1	08/28/06 19:29	LT		
Ethylbenzene	ND	5	1	08/28/06 19:29	LT		
Methyl tert-butyl ether	ND	5	1	08/28/06 19:29	LT		
Styrene	ND	5	1	08/28/06 19:29	LT		
Tetrachloroethene	ND	5	1	08/28/06 19:29	LT		
Toluene	ND	5	1	08/28/06 19:29	LT		
Trichloroethene	ND	5	1	08/28/06 19:29	LT		
Vinyl chloride	ND	2	1	08/28/06 19:29	LT		
m,p-Xylene	ND	5	1	08/28/06 19:29	LT		
o-Xylene	ND	5	1	08/28/06 19:29	LT		
1,2-Dichloroethene (total)	ND	5	1	08/28/06 19:29	LT		
Xylenes, Total	ND	5	1	08/28/06 19:29	LT		
Surr: 1,2-Dichloroethane-d4	94.0	%	62-130	1	08/28/06 19:29	LT	3432034
Surr: 4-Bromofluorobenzene	98.0	%	70-130	1	08/28/06 19:29	LT	3432034
Surr: Toluene-d8	104	%	74-122	1	08/28/06 19:29	LT	3432034

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:F-1

Collected: 08/24/2006 17:47 SPL Sample ID: 06081084-04

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED MCL SW7470A Units: mg/L

Mercury	ND		0.0002	1	09/02/06 15:48	T_H	3439775
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL MCL SW7470A Units: mg/L

Mercury	ND		0.0002	1	09/02/06 14:53	T_H	3439755
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED MCL SW6020A Units: mg/L

Antimony	ND		0.002	1	09/07/06 23:28	AL_H	3445799
Arsenic	ND		0.001	1	09/07/06 23:28	AL_H	3445799
Barium	0.254		0.001	1	09/07/06 23:28	AL_H	3445799
Beryllium	ND		0.001	1	09/07/06 23:28	AL_H	3445799
Cadmium	ND		0.0005	1	09/07/06 23:28	AL_H	3445799
Chromium	ND		0.001	1	09/07/06 23:28	AL_H	3445799
Cobalt	0.00148		0.001	1	09/07/06 23:28	AL_H	3445799
Lead	ND		0.001	1	09/07/06 23:28	AL_H	3445799
Manganese	0.187		0.001	1	09/07/06 23:28	AL_H	3445799
Nickel	0.00308		0.001	1	09/07/06 23:28	AL_H	3445799
Selenium	ND		0.005	1	09/07/06 23:28	AL_H	3445799
Silver	ND		0.0005	1	09/07/06 23:28	AL_H	3445799
Vanadium	0.00139		0.001	1	09/07/06 23:28	AL_H	3445799
Zinc	0.00764		0.001	1	09/07/06 23:28	AL_H	3445799

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:F-1

Collected: 08/24/2006 17:47 SPL Sample ID: 06081084-04

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 0:53	AL_H	3445828
Arsenic	0.0123		0.001	1	09/08/06 0:53	AL_H	3445828
Barium	0.537		0.001	1	09/08/06 0:53	AL_H	3445828
Beryllium	0.00125		0.001	1	09/08/06 0:53	AL_H	3445828
Cadmium	ND		0.0005	1	09/08/06 0:53	AL_H	3445828
Chromium	0.0585		0.001	1	09/08/06 0:53	AL_H	3445828
Cobalt	0.0168		0.001	1	09/08/06 0:53	AL_H	3445828
Lead	0.0186		0.001	1	09/08/06 0:53	AL_H	3445828
Manganese	0.73		0.001	1	09/08/06 0:53	AL_H	3445828
Nickel	0.0383		0.001	1	09/08/06 0:53	AL_H	3445828
Selenium	ND		0.005	1	09/08/06 0:53	AL_H	3445828
Silver	ND		0.0005	1	09/08/06 0:53	AL_H	3445828
Vanadium	0.0454		0.001	1	09/08/06 0:53	AL_H	3445828
Zinc	0.151		0.001	1	09/08/06 0:53	AL_H	3445828

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:F-1

Collected: 08/24/2006 17:47 SPL Sample ID: 06081084-04

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 18:48	S_G	3447841
1,3-Dichlorobenzene	ND		5	1	09/08/06 18:48	S_G	3447841
1,4-Dichlorobenzene	ND		5	1	09/08/06 18:48	S_G	3447841
1-Methylnaphthalene	ND		5	1	09/08/06 18:48	S_G	3447841
2,4-Dimethylphenol	ND		5	1	09/08/06 18:48	S_G	3447841
2,4-Dinitrophenol	ND		25	1	09/08/06 18:48	S_G	3447841
2-Methylnaphthalene	ND		5	1	09/08/06 18:48	S_G	3447841
4-Nitrophenol	ND		25	1	09/08/06 18:48	S_G	3447841
Acenaphthene	ND		5	1	09/08/06 18:48	S_G	3447841
Acenaphthylene	ND		5	1	09/08/06 18:48	S_G	3447841
Anthracene	ND		5	1	09/08/06 18:48	S_G	3447841
Benz(a)anthracene	ND		5	1	09/08/06 18:48	S_G	3447841
Benzo(a)pyrene	ND		5	1	09/08/06 18:48	S_G	3447841
Benzo(b)fluoranthene	ND		5	1	09/08/06 18:48	S_G	3447841
Benzo(g,h,i)perylene	ND		5	1	09/08/06 18:48	S_G	3447841
Benzo(k)fluoranthene	ND		5	1	09/08/06 18:48	S_G	3447841
Bis(2-chloroethyl)ether	14		5	1	09/08/06 18:48	S_G	3447841
Bis(2-chloroisopropyl)ether	ND		5	1	09/08/06 18:48	S_G	3447841
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 18:48	S_G	3447841
Chrysene	ND		5	1	09/08/06 18:48	S_G	3447841
Dibenz(a,h)acridine	ND		25	1	09/08/06 18:48	S_G	3447841
Dibenz(a,h)anthracene	ND		5	1	09/08/06 18:48	S_G	3447841
Diethyl phthalate	ND		5	1	09/08/06 18:48	S_G	3447841
Dimethyl phthalate	ND		5	1	09/08/06 18:48	S_G	3447841
Di-n-butyl phthalate	ND		5	1	09/08/06 18:48	S_G	3447841
Fluoranthene	ND		5	1	09/08/06 18:48	S_G	3447841
Fluorene	ND		5	1	09/08/06 18:48	S_G	3447841
Indene	ND		50	1	09/08/06 18:48	S_G	3447841
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 18:48	S_G	3447841
Naphthalene	ND		5	1	09/08/06 18:48	S_G	3447841
Phenanthrene	ND		5	1	09/08/06 18:48	S_G	3447841
Phenol	ND		5	1	09/08/06 18:48	S_G	3447841
Pyrene	ND		5	1	09/08/06 18:48	S_G	3447841
Pyridine	ND		5	1	09/08/06 18:48	S_G	3447841
Quinoline	ND		50	1	09/08/06 18:48	S_G	3447841
Thiophenol	ND		50	1	09/08/06 18:48	S_G	3447841
2-Methylphenol	ND		5	1	09/08/06 18:48	S_G	3447841
3 & 4-Methylphenol	ND		5	1	09/08/06 18:48	S_G	3447841
Surr: 2,4,6-Tribromophenol	73.3	%	10-123	1	09/08/06 18:48	S_G	3447841
Surr: 2-Fluorobiphenyl	98.0	%	23-116	1	09/08/06 18:48	S_G	3447841

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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9/13/2006 8:43:18 AM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID:F-1 Collected: 08/24/2006 17:47 SPL Sample ID: 06081084-04

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	60.0	%	16-110	1	09/08/06 18:48	S_G	3447841
Surr: Nitrobenzene-d5	90.0	%	21-114	1	09/08/06 18:48	S_G	3447841
Surr: Phenol-d5	41.3	%	10-110	1	09/08/06 18:48	S_G	3447841
Surr: Terphenyl-d14	100	%	22-141	1	09/08/06 18:48	S_G	3447841

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L			
1,1,1-Trichloroethane	ND	5	1	08/28/06 19:58	LT		
1,1,2-Trichloroethane	ND	5	1	08/28/06 19:58	LT		
1,1-Dichloroethane	ND	5	1	08/28/06 19:58	LT		
1,1-Dichloroethene	ND	5	1	08/28/06 19:58	LT		
1,2,3-Trichloropropane	ND	5	1	08/28/06 19:58	LT		
1,2-Dibromoethane	ND	5	1	08/28/06 19:58	LT		
1,2-Dichloroethane	14	5	1	08/28/06 19:58	LT		
1,2-Dichloropropane	24	5	1	08/28/06 19:58	LT		
1,4-Dioxane	ND	200	1	08/28/06 19:58	LT		
2-Butanone	ND	10	1	08/28/06 19:58	LT		
Benzene	ND	5	1	08/28/06 19:58	LT		
Carbon disulfide	ND	5	1	08/28/06 19:58	LT		
Chlorobenzene	ND	5	1	08/28/06 19:58	LT		
Chloroethane	ND	5	1	08/28/06 19:58	LT		
Chloroform	ND	5	1	08/28/06 19:58	LT		
Ethylbenzene	ND	5	1	08/28/06 19:58	LT		
Methyl tert-butyl ether	ND	5	1	08/28/06 19:58	LT		
Styrene	ND	5	1	08/28/06 19:58	LT		
Tetrachloroethene	ND	5	1	08/28/06 19:58	LT		
Toluene	ND	5	1	08/28/06 19:58	LT		
Trichloroethene	ND	5	1	08/28/06 19:58	LT		
Vinyl chloride	ND	2	1	08/28/06 19:58	LT		
m,p-Xylene	ND	5	1	08/28/06 19:58	LT		
o-Xylene	ND	5	1	08/28/06 19:58	LT		
1,2-Dichloroethene (total)	ND	5	1	08/28/06 19:58	LT		
Xylenes, Total	ND	5	1	08/28/06 19:58	LT		
Surr: 1,2-Dichloroethane-d4	96.0	%	62-130	1	08/28/06 19:58	LT	3432035
Surr: 4-Bromofluorobenzene	98.0	%	70-130	1	08/28/06 19:58	LT	3432035
Surr: Toluene-d8	104	%	74-122	1	08/28/06 19:58	LT	3432035

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3

Collected: 08/25/2006 10:35 SPL Sample ID: 06081084-05

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:51 T_H	3439776
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:00 T_H	3439758
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

			MCL	SW6020A	Units: mg/L
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Antimony	ND		0.002	1	09/07/06 23:33 AL_H	3445800
Arsenic	0.0243		0.001	1	09/07/06 23:33 AL_H	3445800
Barium	0.252		0.001	1	09/07/06 23:33 AL_H	3445800
Beryllium	ND		0.001	1	09/07/06 23:33 AL_H	3445800
Cadmium	ND		0.0005	1	09/07/06 23:33 AL_H	3445800
Chromium	ND		0.001	1	09/07/06 23:33 AL_H	3445800
Cobalt	0.00343		0.001	1	09/07/06 23:33 AL_H	3445800
Lead	ND		0.001	1	09/07/06 23:33 AL_H	3445800
Manganese	4.32		0.001	1	09/07/06 23:33 AL_H	3445800
Nickel	0.00741		0.001	1	09/07/06 23:33 AL_H	3445800
Selenium	ND		0.005	1	09/07/06 23:33 AL_H	3445800
Silver	ND		0.0005	1	09/07/06 23:33 AL_H	3445800
Vanadium	ND		0.001	1	09/07/06 23:33 AL_H	3445800
Zinc	0.0298		0.001	1	09/07/06 23:33 AL_H	3445800

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3

Collected: 08/25/2006 10:35 SPL Sample ID: 06081084-05

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 0:58	AL_H	3445829
Arsenic	0.0228		0.001	1	09/08/06 0:58	AL_H	3445829
Barium	0.302		0.001	1	09/08/06 0:58	AL_H	3445829
Beryllium	ND		0.001	1	09/08/06 0:58	AL_H	3445829
Cadmium	ND		0.0005	1	09/08/06 0:58	AL_H	3445829
Chromium	0.0223		0.001	1	09/08/06 0:58	AL_H	3445829
Cobalt	0.00724		0.001	1	09/08/06 0:58	AL_H	3445829
Lead	0.0079		0.001	1	09/08/06 0:58	AL_H	3445829
Manganese	4.03		0.001	1	09/08/06 0:58	AL_H	3445829
Nickel	0.0178		0.001	1	09/08/06 0:58	AL_H	3445829
Selenium	ND		0.005	1	09/08/06 0:58	AL_H	3445829
Silver	ND		0.0005	1	09/08/06 0:58	AL_H	3445829
Vanadium	0.0167		0.001	1	09/08/06 0:58	AL_H	3445829
Zinc	0.0739		0.001	1	09/08/06 0:58	AL_H	3445829

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3

Collected: 08/25/2006 10:35 SPL Sample ID: 06081084-05

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 19:27	S_G	3447846
1,3-Dichlorobenzene	ND		5	1	09/08/06 19:27	S_G	3447846
1,4-Dichlorobenzene	ND		5	1	09/08/06 19:27	S_G	3447846
1-Methylnaphthalene	ND		5	1	09/08/06 19:27	S_G	3447846
2,4-Dimethylphenol	ND		5	1	09/08/06 19:27	S_G	3447846
2,4-Dinitrophenol	ND		25	1	09/08/06 19:27	S_G	3447846
2-Methylnaphthalene	ND		5	1	09/08/06 19:27	S_G	3447846
4-Nitrophenol	ND		25	1	09/08/06 19:27	S_G	3447846
Acenaphthene	ND		5	1	09/08/06 19:27	S_G	3447846
Acenaphthylene	ND		5	1	09/08/06 19:27	S_G	3447846
Anthracene	ND		5	1	09/08/06 19:27	S_G	3447846
Benz(a)anthracene	ND		5	1	09/08/06 19:27	S_G	3447846
Benzo(a)pyrene	ND		5	1	09/08/06 19:27	S_G	3447846
Benzo(b)fluoranthene	ND		5	1	09/08/06 19:27	S_G	3447846
Benzo(g,h,i)perylene	ND		5	1	09/08/06 19:27	S_G	3447846
Benzo(k)fluoranthene	ND		5	1	09/08/06 19:27	S_G	3447846
Bis(2-chloroethyl)ether	ND		5	1	09/08/06 19:27	S_G	3447846
Bis(2-chloroisopropyl)ether	32		5	1	09/08/06 19:27	S_G	3447846
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 19:27	S_G	3447846
Chrysene	ND		5	1	09/08/06 19:27	S_G	3447846
Dibenz(a,h)acridine	ND		25	1	09/08/06 19:27	S_G	3447846
Dibenz(a,h)anthracene	ND		5	1	09/08/06 19:27	S_G	3447846
Diethyl phthalate	ND		5	1	09/08/06 19:27	S_G	3447846
Dimethyl phthalate	ND		5	1	09/08/06 19:27	S_G	3447846
Di-n-butyl phthalate	ND		5	1	09/08/06 19:27	S_G	3447846
Fluoranthene	ND		5	1	09/08/06 19:27	S_G	3447846
Fluorene	ND		5	1	09/08/06 19:27	S_G	3447846
Indene	ND		50	1	09/08/06 19:27	S_G	3447846
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 19:27	S_G	3447846
Naphthalene	6		5	1	09/08/06 19:27	S_G	3447846
Phenanthrene	ND		5	1	09/08/06 19:27	S_G	3447846
Phenol	6		5	1	09/08/06 19:27	S_G	3447846
Pyrene	ND		5	1	09/08/06 19:27	S_G	3447846
Pyridine	ND		5	1	09/08/06 19:27	S_G	3447846
Quinoline	ND		50	1	09/08/06 19:27	S_G	3447846
Thiophenol	ND		50	1	09/08/06 19:27	S_G	3447846
2-Methylphenol	ND		5	1	09/08/06 19:27	S_G	3447846
3 & 4-Methylphenol	ND		5	1	09/08/06 19:27	S_G	3447846
Surr: 2,4,6-Tribromophenol	72.0	%	10-123	1	09/08/06 19:27	S_G	3447846
Surr: 2-Fluorobiphenyl	90.0	%	23-116	1	09/08/06 19:27	S_G	3447846

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3

Collected: 08/25/2006 10:35 SPL Sample ID: 06081084-05

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	60.0	%	16-110	1	09/08/06 19:27	S_G	3447846
Surr: Nitrobenzene-d5	88.0	%	21-114	1	09/08/06 19:27	S_G	3447846
Surr: Phenol-d5	44.0	%	10-110	1	09/08/06 19:27	S_G	3447846
Surr: Terphenyl-d14	96.0	%	22-141	1	09/08/06 19:27	S_G	3447846

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L		
1,1,1-Trichloroethane	ND	5	1	08/28/06 20:27	LT	
1,1,2-Trichloroethane	ND	5	1	08/28/06 20:27	LT	
1,1-Dichloroethane	ND	5	1	08/28/06 20:27	LT	
1,1-Dichloroethene	ND	5	1	08/28/06 20:27	LT	
1,2,3-Trichloropropane	ND	5	1	08/28/06 20:27	LT	
1,2-Dibromoethane	ND	5	1	08/28/06 20:27	LT	
1,2-Dichloroethane	100	5	1	08/28/06 20:27	LT	
1,2-Dichloropropane	20	5	1	08/28/06 20:27	LT	
1,4-Dioxane	ND	200	1	08/28/06 20:27	LT	
2-Butanone	ND	10	1	08/28/06 20:27	LT	
Benzene	940	50	10	08/29/06 12:45	LT	
Carbon disulfide	ND	5	1	08/28/06 20:27	LT	
Chlorobenzene	ND	5	1	08/28/06 20:27	LT	
Chloroethane	ND	5	1	08/28/06 20:27	LT	
Chloroform	ND	5	1	08/28/06 20:27	LT	
Ethylbenzene	ND	5	1	08/28/06 20:27	LT	
Methyl tert-butyl ether	ND	5	1	08/28/06 20:27	LT	
Styrene	ND	5	1	08/28/06 20:27	LT	
Tetrachloroethene	ND	5	1	08/28/06 20:27	LT	
Toluene	ND	5	1	08/28/06 20:27	LT	
Trichloroethene	ND	5	1	08/28/06 20:27	LT	
Vinyl chloride	ND	2	1	08/28/06 20:27	LT	
m,p-Xylene	ND	5	1	08/28/06 20:27	LT	
o-Xylene	ND	5	1	08/28/06 20:27	LT	
1,2-Dichloroethene (total)	ND	5	1	08/28/06 20:27	LT	
Xylenes, Total	ND	5	1	08/28/06 20:27	LT	
Surr: 1,2-Dichloroethane-d4	92.0	%	62-130	1	08/28/06 20:27	LT
Surr: 1,2-Dichloroethane-d4	94.0	%	62-130	10	08/29/06 12:45	LT
Surr: 4-Bromofluorobenzene	100	%	70-130	1	08/28/06 20:27	LT
Surr: 4-Bromofluorobenzene	96.0	%	70-130	10	08/29/06 12:45	LT
Surr: Toluene-d8	104	%	74-122	10	08/29/06 12:45	LT
Surr: Toluene-d8	104	%	74-122	1	08/28/06 20:27	LT

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3B

Collected: 08/25/2006 11:00 SPL Sample ID: 06081084-06

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:53 T_H	3439777
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

		MCL	SW7470A	Units: mg/L
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Mercury	ND	0.0002	1	09/02/06 15:03 T_H	3439759
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 11:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

		MCL	SW6020A	Units: mg/L
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Antimony	ND	0.002	1	09/07/06 23:37 AL_H	3445801
Arsenic	0.00156	0.001	1	09/07/06 23:37 AL_H	3445801
Barium	0.0535	0.001	1	09/07/06 23:37 AL_H	3445801
Beryllium	ND	0.001	1	09/07/06 23:37 AL_H	3445801
Cadmium	ND	0.0005	1	09/07/06 23:37 AL_H	3445801
Chromium	ND	0.001	1	09/07/06 23:37 AL_H	3445801
Cobalt	ND	0.001	1	09/07/06 23:37 AL_H	3445801
Lead	ND	0.001	1	09/07/06 23:37 AL_H	3445801
Manganese	0.234	0.001	1	09/07/06 23:37 AL_H	3445801
Nickel	0.00328	0.001	1	09/07/06 23:37 AL_H	3445801
Selenium	ND	0.005	1	09/07/06 23:37 AL_H	3445801
Silver	ND	0.0005	1	09/07/06 23:37 AL_H	3445801
Vanadium	ND	0.001	1	09/07/06 23:37 AL_H	3445801
Zinc	0.00627	0.001	1	09/07/06 23:37 AL_H	3445801

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3B

Collected: 08/25/2006 11:00 SPL Sample ID: 06081084-06

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 1:03	AL_H	3445830
Arsenic	0.00184		0.001	1	09/08/06 1:03	AL_H	3445830
Barium	0.155		0.001	1	09/08/06 1:03	AL_H	3445830
Beryllium	0.00102		0.001	1	09/08/06 1:03	AL_H	3445830
Cadmium	ND		0.0005	1	09/08/06 1:03	AL_H	3445830
Chromium	0.0152		0.001	1	09/08/06 1:03	AL_H	3445830
Cobalt	0.00324		0.001	1	09/08/06 1:03	AL_H	3445830
Lead	0.00605		0.001	1	09/08/06 1:03	AL_H	3445830
Manganese	0.118		0.001	1	09/08/06 1:03	AL_H	3445830
Nickel	0.0134		0.001	1	09/08/06 1:03	AL_H	3445830
Selenium	ND		0.005	1	09/08/06 1:03	AL_H	3445830
Silver	ND		0.0005	1	09/08/06 1:03	AL_H	3445830
Vanadium	0.0195		0.001	1	09/08/06 1:03	AL_H	3445830
Zinc	0.0305		0.001	1	09/08/06 1:03	AL_H	3445830

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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9/13/2006 8:43:21 AM



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3B

Collected: 08/25/2006 11:00 SPL Sample ID: 06081084-06

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 20:06	S_G	3447848
1,3-Dichlorobenzene	ND		5	1	09/08/06 20:06	S_G	3447848
1,4-Dichlorobenzene	ND		5	1	09/08/06 20:06	S_G	3447848
1-Methylnaphthalene	ND		5	1	09/08/06 20:06	S_G	3447848
2,4-Dimethylphenol	ND		5	1	09/08/06 20:06	S_G	3447848
2,4-Dinitrophenol	ND		25	1	09/08/06 20:06	S_G	3447848
2-Methylnaphthalene	ND		5	1	09/08/06 20:06	S_G	3447848
4-Nitrophenol	ND		25	1	09/08/06 20:06	S_G	3447848
Acenaphthene	ND		5	1	09/08/06 20:06	S_G	3447848
Acenaphthylene	ND		5	1	09/08/06 20:06	S_G	3447848
Anthracene	ND		5	1	09/08/06 20:06	S_G	3447848
Benz(a)anthracene	ND		5	1	09/08/06 20:06	S_G	3447848
Benzo(a)pyrene	ND		5	1	09/08/06 20:06	S_G	3447848
Benzo(b)fluoranthene	ND		5	1	09/08/06 20:06	S_G	3447848
Benzo(g,h,i)perylene	ND		5	1	09/08/06 20:06	S_G	3447848
Benzo(k)fluoranthene	ND		5	1	09/08/06 20:06	S_G	3447848
Bis(2-chloroethyl)ether	ND		5	1	09/08/06 20:06	S_G	3447848
Bis(2-chloroisopropyl)ether	ND		5	1	09/08/06 20:06	S_G	3447848
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 20:06	S_G	3447848
Chrysene	ND		5	1	09/08/06 20:06	S_G	3447848
Dibenz(a,h)acridine	ND		25	1	09/08/06 20:06	S_G	3447848
Dibenz(a,h)anthracene	ND		5	1	09/08/06 20:06	S_G	3447848
Diethyl phthalate	ND		5	1	09/08/06 20:06	S_G	3447848
Dimethyl phthalate	ND		5	1	09/08/06 20:06	S_G	3447848
Di-n-butyl phthalate	ND		5	1	09/08/06 20:06	S_G	3447848
Fluoranthene	ND		5	1	09/08/06 20:06	S_G	3447848
Fluorene	ND		5	1	09/08/06 20:06	S_G	3447848
Indene	ND		50	1	09/08/06 20:06	S_G	3447848
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 20:06	S_G	3447848
Naphthalene	ND		5	1	09/08/06 20:06	S_G	3447848
Phenanthrene	ND		5	1	09/08/06 20:06	S_G	3447848
Phenol	ND		5	1	09/08/06 20:06	S_G	3447848
Pyrene	ND		5	1	09/08/06 20:06	S_G	3447848
Pyridine	ND		5	1	09/08/06 20:06	S_G	3447848
Quinoline	ND		50	1	09/08/06 20:06	S_G	3447848
Thiophenol	ND		50	1	09/08/06 20:06	S_G	3447848
2-Methylphenol	ND		5	1	09/08/06 20:06	S_G	3447848
3 & 4-Methylphenol	ND		5	1	09/08/06 20:06	S_G	3447848
Surr: 2,4,6-Tribromophenol	56.0	%	10-123	1	09/08/06 20:06	S_G	3447848
Surr: 2-Fluorobiphenyl	90.0	%	23-116	1	09/08/06 20:06	S_G	3447848

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-3B

Collected: 08/25/2006 11:00 SPL Sample ID: 06081084-06

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorophenol	41.3	%	16-110	1	09/08/06 20:06	S_G	3447848
Surr: Nitrobenzene-d5	86.0	%	21-114	1	09/08/06 20:06	S_G	3447848
Surr: Phenol-d5	29.3	%	10-110	1	09/08/06 20:06	S_G	3447848
Surr: Terphenyl-d14	86.0	%	22-141	1	09/08/06 20:06	S_G	3447848

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00

VOLATILE ORGANICS BY METHOD 8260B		MCL	SW8260B	Units: ug/L			
1,1,1-Trichloroethane	ND	5	1	08/28/06 20:54	LT		
1,1,2-Trichloroethane	ND	5	1	08/28/06 20:54	LT		
1,1-Dichloroethane	ND	5	1	08/28/06 20:54	LT		
1,1-Dichloroethene	ND	5	1	08/28/06 20:54	LT		
1,2,3-Trichloropropane	ND	5	1	08/28/06 20:54	LT		
1,2-Dibromoethane	ND	5	1	08/28/06 20:54	LT		
1,2-Dichloroethane	ND	5	1	08/28/06 20:54	LT		
1,2-Dichloropropane	ND	5	1	08/28/06 20:54	LT		
1,4-Dioxane	ND	200	1	08/28/06 20:54	LT		
2-Butanone	ND	10	1	08/28/06 20:54	LT		
Benzene	ND	5	1	08/28/06 20:54	LT		
Carbon disulfide	ND	5	1	08/28/06 20:54	LT		
Chlorobenzene	ND	5	1	08/28/06 20:54	LT		
Chloroethane	ND	5	1	08/28/06 20:54	LT		
Chloroform	ND	5	1	08/28/06 20:54	LT		
Ethylbenzene	ND	5	1	08/28/06 20:54	LT		
Methyl tert-butyl ether	ND	5	1	08/28/06 20:54	LT		
Styrene	ND	5	1	08/28/06 20:54	LT		
Tetrachloroethene	ND	5	1	08/28/06 20:54	LT		
Toluene	ND	5	1	08/28/06 20:54	LT		
Trichloroethene	ND	5	1	08/28/06 20:54	LT		
Vinyl chloride	ND	2	1	08/28/06 20:54	LT		
m,p-Xylene	ND	5	1	08/28/06 20:54	LT		
o-Xylene	ND	5	1	08/28/06 20:54	LT		
1,2-Dichloroethene (total)	ND	5	1	08/28/06 20:54	LT		
Xylenes, Total	ND	5	1	08/28/06 20:54	LT		
Surr: 1,2-Dichloroethane-d4	96.0	%	62-130	1	08/28/06 20:54	LT	3432037
Surr: 4-Bromofluorobenzene	98.0	%	70-130	1	08/28/06 20:54	LT	3432037
Surr: Toluene-d8	102	%	74-122	1	08/28/06 20:54	LT	3432037

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-2

Collected: 08/25/2006 12:35 SPL Sample ID: 06081084-07

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
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MERCURY, DISSOLVED

			MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:55 T_H	3439778
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 10:00	T_H	1.00

MERCURY, TOTAL

		MCL	SW7470A	Units: mg/L
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Mercury	ND		0.0002	1	09/02/06 15:05 T_H	3439760
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Prep Method	Prep Date	Prep Initials	Prep Factor
SW7470A	09/02/2006 11:00	T_H	1.00

METALS BY METHOD 6020, DISSOLVED

		MCL	SW6020A	Units: mg/L
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Antimony	ND	0.002	1	09/07/06 23:42 AL_H	3445802
Arsenic	0.0104	0.001	1	09/07/06 23:42 AL_H	3445802
Barium	0.369	0.001	1	09/07/06 23:42 AL_H	3445802
Beryllium	ND	0.001	1	09/07/06 23:42 AL_H	3445802
Cadmium	ND	0.0005	1	09/07/06 23:42 AL_H	3445802
Chromium	ND	0.001	1	09/07/06 23:42 AL_H	3445802
Cobalt	0.0111	0.001	1	09/07/06 23:42 AL_H	3445802
Lead	ND	0.001	1	09/07/06 23:42 AL_H	3445802
Manganese	0.836	0.001	1	09/07/06 23:42 AL_H	3445802
Nickel	0.0148	0.001	1	09/07/06 23:42 AL_H	3445802
Selenium	ND	0.005	1	09/07/06 23:42 AL_H	3445802
Silver	ND	0.0005	1	09/07/06 23:42 AL_H	3445802
Vanadium	ND	0.001	1	09/07/06 23:42 AL_H	3445802
Zinc	0.0836	0.001	1	09/07/06 23:42 AL_H	3445802

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3005A	08/28/2006 13:26	EMB	1.00

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-2

Collected: 08/25/2006 12:35 SPL Sample ID: 06081084-07

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
METALS BY METHOD 6020, TOTAL							
Antimony	ND		0.002	1	09/08/06 1:07	AL_H	3445831
Arsenic	0.0159		0.001	1	09/08/06 1:07	AL_H	3445831
Barium	0.514		0.001	1	09/08/06 1:07	AL_H	3445831
Beryllium	0.00175		0.001	1	09/08/06 1:07	AL_H	3445831
Cadmium	ND		0.0005	1	09/08/06 1:07	AL_H	3445831
Chromium	0.112		0.001	1	09/08/06 1:07	AL_H	3445831
Cobalt	0.0229		0.001	1	09/08/06 1:07	AL_H	3445831
Lead	0.0227		0.001	1	09/08/06 1:07	AL_H	3445831
Manganese	1.13		0.001	1	09/08/06 1:07	AL_H	3445831
Nickel	0.0648		0.001	1	09/08/06 1:07	AL_H	3445831
Selenium	ND		0.005	1	09/08/06 1:07	AL_H	3445831
Silver	ND		0.0005	1	09/08/06 1:07	AL_H	3445831
Vanadium	0.0493		0.001	1	09/08/06 1:07	AL_H	3445831
Zinc	0.625		0.001	1	09/08/06 1:07	AL_H	3445831

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3010A	08/29/2006 10:38	F_I	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-2

Collected: 08/25/2006 12:35 SPL Sample ID: 06081084-07

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
SEMIVOLATILE ORGANICS BY METHOD 8270C							
1,2-Dichlorobenzene	ND		5	1	09/08/06 20:45	S_G	3447849
1,3-Dichlorobenzene	ND		5	1	09/08/06 20:45	S_G	3447849
1,4-Dichlorobenzene	ND		5	1	09/08/06 20:45	S_G	3447849
1-Methylnaphthalene	ND		5	1	09/08/06 20:45	S_G	3447849
2,4-Dimethylphenol	ND		5	1	09/08/06 20:45	S_G	3447849
2,4-Dinitrophenol	ND		25	1	09/08/06 20:45	S_G	3447849
2-Methylnaphthalene	ND		5	1	09/08/06 20:45	S_G	3447849
4-Nitrophenol	ND		25	1	09/08/06 20:45	S_G	3447849
Acenaphthene	ND		5	1	09/08/06 20:45	S_G	3447849
Acenaphthylene	ND		5	1	09/08/06 20:45	S_G	3447849
Anthracene	ND		5	1	09/08/06 20:45	S_G	3447849
Benz(a)anthracene	ND		5	1	09/08/06 20:45	S_G	3447849
Benzo(a)pyrene	ND		5	1	09/08/06 20:45	S_G	3447849
Benzo(b)fluoranthene	ND		5	1	09/08/06 20:45	S_G	3447849
Benzo(g,h,i)perylene	ND		5	1	09/08/06 20:45	S_G	3447849
Benzo(k)fluoranthene	ND		5	1	09/08/06 20:45	S_G	3447849
Bis(2-chloroethyl)ether	1400		500	100	09/11/06 12:05	S_G	3448036
Bis(2-chloroisopropyl)ether	3000		500	100	09/11/06 12:05	S_G	3448036
Bis(2-ethylhexyl)phthalate	ND		5	1	09/08/06 20:45	S_G	3447849
Chrysene	ND		5	1	09/08/06 20:45	S_G	3447849
Dibenz(a,h)acridine	ND		25	1	09/08/06 20:45	S_G	3447849
Dibenz(a,h)anthracene	ND		5	1	09/08/06 20:45	S_G	3447849
Diethyl phthalate	ND		5	1	09/08/06 20:45	S_G	3447849
Dimethyl phthalate	ND		5	1	09/08/06 20:45	S_G	3447849
Di-n-butyl phthalate	ND		5	1	09/08/06 20:45	S_G	3447849
Fluoranthene	ND		5	1	09/08/06 20:45	S_G	3447849
Fluorene	ND		5	1	09/08/06 20:45	S_G	3447849
Indene	ND		50	1	09/08/06 20:45	S_G	3447849
Indeno(1,2,3-cd)pyrene	ND		5	1	09/08/06 20:45	S_G	3447849
Naphthalene	ND		5	1	09/08/06 20:45	S_G	3447849
Phenanthrene	ND		5	1	09/08/06 20:45	S_G	3447849
Phenol	ND		5	1	09/08/06 20:45	S_G	3447849
Pyrene	ND		5	1	09/08/06 20:45	S_G	3447849
Pyridine	ND		5	1	09/08/06 20:45	S_G	3447849
Quinoline	ND		50	1	09/08/06 20:45	S_G	3447849
Thiophenol	ND		50	1	09/08/06 20:45	S_G	3447849
2-Methylphenol	ND		5	1	09/08/06 20:45	S_G	3447849
3 & 4-Methylphenol	ND		5	1	09/08/06 20:45	S_G	3447849
Surr: 2,4,6-Tribromophenol	D	*	% 10-123	100	09/11/06 12:05	S_G	3448036
Surr: 2,4,6-Tribromophenol	74.7		% 10-123	1	09/08/06 20:45	S_G	3447849

Qualifiers:
ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-2

Collected: 08/25/2006 12:35 SPL Sample ID: 06081084-07

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
Surr: 2-Fluorobiphenyl	D	*	% 23-116	100	09/11/06 12:05	S_G	3448036
Surr: 2-Fluorobiphenyl	90.0		% 23-116	1	09/08/06 20:45	S_G	3447849
Surr: 2-Fluorophenol	54.7		% 16-110	1	09/08/06 20:45	S_G	3447849
Surr: 2-Fluorophenol	D	*	% 16-110	100	09/11/06 12:05	S_G	3448036
Surr: Nitrobenzene-d5	86.0		% 21-114	1	09/08/06 20:45	S_G	3447849
Surr: Nitrobenzene-d5	D	*	% 21-114	100	09/11/06 12:05	S_G	3448036
Surr: Phenol-d5	38.7		% 10-110	1	09/08/06 20:45	S_G	3447849
Surr: Phenol-d5	D	*	% 10-110	100	09/11/06 12:05	S_G	3448036
Surr: Terphenyl-d14	92.0		% 22-141	1	09/08/06 20:45	S_G	3447849
Surr: Terphenyl-d14	D	*	% 22-141	100	09/11/06 12:05	S_G	3448036

Prep Method	Prep Date	Prep Initials	Prep Factor
SW3510C	08/30/2006 11:19	CGP	1.00
SW3510C	08/30/2006 11:19	CGP	1.00

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: G-2

Collected: 08/25/2006 12:35 SPL Sample ID: 06081084-07

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B							
1,1,1-Trichloroethane	ND		5	1	08/28/06 21:23	LT	3432038
1,1,2-Trichloroethane	ND		5	1	08/28/06 21:23	LT	3432038
1,1-Dichloroethane	ND		5	1	08/28/06 21:23	LT	3432038
1,1-Dichloroethene	ND		5	1	08/28/06 21:23	LT	3432038
1,2,3-Trichloropropane	ND		5	1	08/28/06 21:23	LT	3432038
1,2-Dibromoethane	ND		5	1	08/28/06 21:23	LT	3432038
1,2-Dichloroethane	30		5	1	08/28/06 21:23	LT	3432038
1,2-Dichloropropane	34		5	1	08/28/06 21:23	LT	3432038
1,4-Dioxane	280		200	1	08/28/06 21:23	LT	3432038
2-Butanone	ND		10	1	08/28/06 21:23	LT	3432038
Benzene	110		5	1	08/28/06 21:23	LT	3432038
Carbon disulfide	ND		5	1	08/28/06 21:23	LT	3432038
Chlorobenzene	ND		5	1	08/28/06 21:23	LT	3432038
Chloroethane	ND		5	1	08/28/06 21:23	LT	3432038
Chloroform	ND		5	1	08/28/06 21:23	LT	3432038
Ethylbenzene	ND		5	1	08/28/06 21:23	LT	3432038
Methyl tert-butyl ether	ND		5	1	08/28/06 21:23	LT	3432038
Styrene	ND		5	1	08/28/06 21:23	LT	3432038
Tetrachloroethene	ND		5	1	08/28/06 21:23	LT	3432038
Toluene	ND		5	1	08/28/06 21:23	LT	3432038
Trichloroethene	ND		5	1	08/28/06 21:23	LT	3432038
Vinyl chloride	7		2	1	08/28/06 21:23	LT	3432038
m,p-Xylene	ND		5	1	08/28/06 21:23	LT	3432038
o-Xylene	ND		5	1	08/28/06 21:23	LT	3432038
1,2-Dichloroethene (total)	5		5	1	08/28/06 21:23	LT	3432038
Xylenes, Total	ND		5	1	08/28/06 21:23	LT	3432038
Surr: 1,2-Dichloroethane-d4	98.0	%	62-130	1	08/28/06 21:23	LT	3432038
Surr: 4-Bromofluorobenzene	96.0	%	70-130	1	08/28/06 21:23	LT	3432038
Surr: Toluene-d8	104	%	74-122	1	08/28/06 21:23	LT	3432038

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Client Sample ID: TRIP BLANK #1 Collected: 08/24/2006 0:00 SPL Sample ID: 06081084-11

Site: Huntsman/LA002348

Analyses/Method	Result	QUAL	Rep.Limit	Dil. Factor	Date Analyzed	Analyst	Seq. #
VOLATILE ORGANICS BY METHOD 8260B							
1,1,1-Trichloroethane	ND		5	1	08/28/06 16:12	LT	3432029
1,1,2-Trichloroethane	ND		5	1	08/28/06 16:12	LT	3432029
1,1-Dichloroethane	ND		5	1	08/28/06 16:12	LT	3432029
1,1-Dichloroethene	ND		5	1	08/28/06 16:12	LT	3432029
1,2,3-Trichloropropane	ND		5	1	08/28/06 16:12	LT	3432029
1,2-Dibromoethane	ND		5	1	08/28/06 16:12	LT	3432029
1,2-Dichloroethane	ND		5	1	08/28/06 16:12	LT	3432029
1,2-Dichloropropane	ND		5	1	08/28/06 16:12	LT	3432029
1,4-Dioxane	ND		200	1	08/28/06 16:12	LT	3432029
2-Butanone	ND		10	1	08/28/06 16:12	LT	3432029
Benzene	ND		5	1	08/28/06 16:12	LT	3432029
Carbon disulfide	ND		5	1	08/28/06 16:12	LT	3432029
Chlorobenzene	ND		5	1	08/28/06 16:12	LT	3432029
Chloroethane	ND		5	1	08/28/06 16:12	LT	3432029
Chloroform	ND		5	1	08/28/06 16:12	LT	3432029
Ethylbenzene	ND		5	1	08/28/06 16:12	LT	3432029
Methyl tert-butyl ether	ND		5	1	08/28/06 16:12	LT	3432029
Styrene	ND		5	1	08/28/06 16:12	LT	3432029
Tetrachloroethene	ND		5	1	08/28/06 16:12	LT	3432029
Toluene	ND		5	1	08/28/06 16:12	LT	3432029
Trichloroethene	ND		5	1	08/28/06 16:12	LT	3432029
Vinyl chloride	ND		2	1	08/28/06 16:12	LT	3432029
m,p-Xylene	ND		5	1	08/28/06 16:12	LT	3432029
o-Xylene	ND		5	1	08/28/06 16:12	LT	3432029
1,2-Dichloroethene (total)	ND		5	1	08/28/06 16:12	LT	3432029
Xylenes, Total	ND		5	1	08/28/06 16:12	LT	3432029
Surr: 1,2-Dichloroethane-d4	98.0	%	62-130	1	08/28/06 16:12	LT	3432029
Surr: 4-Bromofluorobenzene	98.0	%	70-130	1	08/28/06 16:12	LT	3432029
Surr: Toluene-d8	102	%	74-122	1	08/28/06 16:12	LT	3432029

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
* - Surrogate Recovery Outside Advisable QC Limits
J - Estimated Value between MDL and PQL
TNTC - Too numerous to count

>MCL - Result Over Maximum Contamination Limit(MCL)
D - Surrogate Recovery Unreportable due to Dilution
MI - Matrix Interference

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Quality Control Documentation



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Metals by Method 6020, Dissolved
Method: SW6020A

WorkOrder: 06081084
Lab Batch ID: 60008-I

Method Blank

RunID: ICPMS_060907A-3445787 Units: mg/L
Analysis Date: 09/07/2006 22:31 Analyst: AL_H
Preparation Date: 08/28/2006 13:26 Prep By: EMB Method SW3005A

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
06081084-01D	D-2
06081084-02D	E-3
06081084-03D	C-2
06081084-04D	F-1
06081084-05D	G-3
06081084-06D	G-3B
06081084-07D	G-2

Analyte	Result	Rep Limit
Antimony	ND	0.002
Arsenic	ND	0.001
Barium	ND	0.001
Beryllium	ND	0.001
Cadmium	ND	0.0005
Chromium	ND	0.001
Cobalt	ND	0.001
Lead	ND	0.001
Manganese	ND	0.001
Nickel	ND	0.001
Selenium	ND	0.005
Silver	ND	0.0005
Vanadium	ND	0.001
Zinc	ND	0.001

Laboratory Control Sample (LCS)

RunID: ICPMS_060907A-3445788 Units: mg/L
Analysis Date: 09/07/2006 22:36 Analyst: AL_H
Preparation Date: 08/28/2006 13:26 Prep By: EMB Method SW3005A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Antimony	0.1000	0.1131	113.1	80	120
Arsenic	0.1000	0.1079	107.9	80	120
Barium	0.1000	0.1105	110.5	80	120
Beryllium	0.1000	0.1113	111.3	80	120
Cadmium	0.1000	0.1145	114.5	80	120
Chromium	0.1000	0.1074	107.4	80	120
Cobalt	0.1000	0.1051	105.1	80	120
Lead	0.1000	0.1106	110.6	80	120
Manganese	0.1000	0.1076	107.6	80	120
Nickel	0.1000	0.1083	108.3	80	120
Selenium	0.1000	0.1077	107.7	80	120
Silver	0.1000	0.1111	111.1	80	120
Vanadium	0.1000	0.1093	109.3	80	120
Zinc	0.1000	0.1106	110.6	80	120

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Metals by Method 6020, Dissolved
Method: SW6020A

WorkOrder: 06081084
Lab Batch ID: 60008-I

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081084-01
 RunID: ICPMS_060907A-3445790 Units: mg/L
 Analysis Date: 09/07/2006 22:45 Analyst: AL_H
 Preparation Date: 08/28/2006 13:26 Prep By: EMB Method SW3005A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Antimony	ND	0.1	0.1174	117.4	0.1	0.1159	115.9	1.286	20	75	125
Arsenic	0.001270	0.1	0.1139	112.6	0.1	0.1144	113.1	0.4380	20	75	125
Barium	1.003	0.1	1.108	N/C	0.1	1.108	N/C	N/C	20	75	125
Beryllium	ND	0.1	0.1191	119.1	0.1	0.1168	116.8	1.950	20	75	125
Cadmium	0.0005183	0.1	0.1125	112.0	0.1	0.1127	112.2	0.1776	20	75	125
Chromium	ND	0.1	0.1044	104.0	0.1	0.1043	103.9	0.09583	20	75	125
Cobalt	0.04149	0.1	0.1406	99.11	0.1	0.1397	98.21	0.6422	20	75	125
Lead	ND	0.1	0.1143	113.9	0.1	0.1159	115.5	1.390	20	75	125
Manganese	2.224	0.1	2.310	N/C	0.1	2.310	N/C	N/C	20	75	125
Nickel	0.1782	0.1	0.2780	99.80	0.1	0.2772	99.00	0.2882	20	75	125
Selenium	ND	0.1	0.1105	109.6	0.1	0.1143	113.4	3.381	20	75	125
Silver	ND	0.1	0.1052	105.2	0.1	0.1062	106.2	0.9461	20	75	125
Vanadium	0.001772	0.1	0.1114	109.6	0.1	0.1109	109.1	0.4498	20	75	125
Zinc	0.008198	0.1	0.1096	101.4	0.1	0.1094	101.2	0.1826	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Metals by Method 6020, Total
Method: SW6020A

WorkOrder: 06081084
Lab Batch ID: 60048-I

Method Blank

RunID: ICPMS_060907A-3445805 Units: mg/L
Analysis Date: 09/07/2006 23:57 Analyst: AL_H
Preparation Date: 08/29/2006 10:38 Prep By: F_I Method SW3010A

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
06081084-01C	D-2
06081084-02C	E-3
06081084-03C	C-2
06081084-04C	F-1
06081084-05C	G-3
06081084-06C	G-3B
06081084-07C	G-2

Analyte	Result	Rep Limit
Antimony	ND	0.002
Arsenic	ND	0.001
Barium	ND	0.001
Beryllium	ND	0.001
Cadmium	ND	0.0005
Chromium	ND	0.001
Cobalt	ND	0.001
Lead	ND	0.001
Manganese	ND	0.001
Nickel	ND	0.001
Selenium	ND	0.005
Silver	ND	0.0005
Vanadium	ND	0.001
Zinc	ND	0.001

Laboratory Control Sample (LCS)

RunID: ICPMS_060907A-3445806 Units: mg/L
Analysis Date: 09/08/2006 0:01 Analyst: AL_H
Preparation Date: 08/29/2006 10:38 Prep By: F_I Method SW3010A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Antimony	0.1000	0.1069	106.9	80	120
Arsenic	0.1000	0.1028	102.8	80	120
Barium	0.1000	0.1078	107.8	80	120
Beryllium	0.1000	0.1058	105.8	80	120
Cadmium	0.1000	0.1080	108.0	80	120
Chromium	0.1000	0.1019	101.9	80	120
Cobalt	0.1000	0.09968	99.68	80	120
Lead	0.1000	0.1053	105.3	80	120
Manganese	0.1000	0.1027	102.7	80	120
Nickel	0.1000	0.1025	102.5	80	120
Selenium	0.1000	0.1042	104.2	80	120
Silver	0.1000	0.1116	111.6	80	120
Vanadium	0.1000	0.1015	101.5	80	120
Zinc	0.1000	0.1059	105.9	80	120

Post Digestion Spike (PDS) / Post Digestion Spike Duplicate (PDSD)

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Metals by Method 6020, Total
Method: SW6020A

WorkOrder: 06081084
Lab Batch ID: 60048-I

Sample Spiked: 06081084-01
 RunID: ICPMS_060907A-3445819 Units: mg/L
 Analysis Date: 09/08/2006 0:25 Analyst: AL_H

Analyte	Sample Result	PDS Spike Added	PDS Result	PDS % Recovery	PDSD Spike Added	PDSD Result	PDSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Antimony	ND	0.1	0.1108	110.8	0.1	0.1109	110.9	0.09021	20	75	125
Vanadium	0.054	0.1	0.1581	104.1	0.1	0.1556	101.6	1.594	20	75	125
Zinc	0.094	0.1	0.1909	96.95	0.1	0.1903	96.35	0.3148	20	75	125

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081084-01
 RunID: ICPMS_060907A-3445808 Units: mg/L
 Analysis Date: 09/08/2006 0:11 Analyst: AL_H
 Preparation Date: 08/29/2006 10:38 Prep By: F_I Method SW3010A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Antimony	ND	0.1	0.06912	69.12 *	0.1	0.08544	85.44	21.12 *	20	75	125
Arsenic	0.02502	0.1	0.1456	120.6	0.1	0.1323	107.3	9.572	20	75	125
Barium	1.252	0.1	1.499	N/C	0.1	1.391	N/C	N/C	20	75	125
Beryllium	0.001673	0.1	0.1132	111.5	0.1	0.1109	109.2	2.053	20	75	125
Cadmium	0.0008849	0.1	0.1043	103.4	0.1	0.1058	104.9	1.428	20	75	125
Chromium	0.02959	0.1	0.1505	120.9	0.1	0.1313	101.7	13.63	20	75	125
Cobalt	0.08011	0.1	0.1807	100.6	0.1	0.1727	92.59	4.527	20	75	125
Lead	0.02141	0.1	0.1406	119.2	0.1	0.1329	111.5	5.631	20	75	125
Manganese	2.739	0.1	2.996	N/C	0.1	2.795	N/C	N/C	20	75	125
Nickel	0.2205	0.1	0.3358	115.3	0.1	0.3137	93.20	6.805	20	75	125
Selenium	0.002690	0.1	0.09738	94.69	0.1	0.1013	98.61	3.946	20	75	125
Silver	ND	0.1	0.1030	102.9	0.1	0.1031	103.0	0.09704	20	75	125
Vanadium	0.05402	0.1	0.1911	137.1 *	0.1	0.1639	109.9	15.32	20	75	125
Zinc	0.09395	0.1	0.2443	150.4 *	0.1	0.1987	104.8	20.59 *	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Mercury, Dissolved
Method: SW7470A

WorkOrder: 06081084
Lab Batch ID: 60168

Method Blank

RunID: HGLC_060902A-3439766 Units: mg/L
Analysis Date: 09/02/2006 15:23 Analyst: T_H
Preparation Date: 09/02/2006 10:00 Prep By: T_H Method SW7470A

Analyte	Result	Rep Limit
Mercury	ND	0.0002

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
06081084-01D	D-2
06081084-02D	E-3
06081084-03D	C-2
06081084-04D	F-1
06081084-05D	G-3
06081084-06D	G-3B
06081084-07D	G-2

Laboratory Control Sample (LCS)

RunID: HGLC_060902A-3439767 Units: mg/L
Analysis Date: 09/02/2006 15:26 Analyst: T_H
Preparation Date: 09/02/2006 10:00 Prep By: T_H Method SW7470A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	0.002000	0.001988	99.39	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081084-03
RunID: HGLC_060902A-3439771 Units: mg/L
Analysis Date: 09/02/2006 15:37 Analyst: T_H
Preparation Date: 09/02/2006 10:00 Prep By: T_H Method SW7470A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.002	0.001953	97.64	0.002	0.001938	96.90	0.7668	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

06081084 Page 38

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:28 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Mercury, Total
Method: SW7470A

WorkOrder: 06081084
Lab Batch ID: 60170

Method Blank

RunID: HGLC_060902A-3439738 Units: mg/L
Analysis Date: 09/02/2006 14:09 Analyst: T_H
Preparation Date: 09/02/2006 11:00 Prep By: T_H Method SW7470A

Analyte	Result	Rep Limit
Mercury	ND	0.0002

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
06081084-01C	D-2
06081084-02C	E-3
06081084-03C	C-2
06081084-04C	F-1
06081084-05C	G-3
06081084-06C	G-3B
06081084-07C	G-2

Laboratory Control Sample (LCS)

RunID: HGLC_060902A-3439739 Units: mg/L
Analysis Date: 09/02/2006 14:11 Analyst: T_H
Preparation Date: 09/02/2006 11:00 Prep By: T_H Method SW7470A

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Mercury	0.002000	0.002029	101.4	80	120

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06090034-03
RunID: HGLC_060902A-3439741 Units: mg/L
Analysis Date: 09/02/2006 14:16 Analyst: T_H
Preparation Date: 09/02/2006 11:00 Prep By: T_H Method SW7470A

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Mercury	ND	0.002	0.002057	97.88	0.002	0.002025	96.28	1.569	20	75	125

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:29 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C

WorkOrder: 06081084
Lab Batch ID: 60064

<u>Method Blank</u>			Samples in Analytical Batch:	
Analyte	Result	Rep Limit	<u>Lab Sample ID</u>	<u>Client Sample ID</u>
RunID: J_060908B-3447850	Units: ug/L			
Analysis Date: 09/08/2006 21:23	Analyst: S_G		06081084-01B	D-2
Preparation Date: 08/30/2006 11:19	Prep By: CGP Method SW3510C		06081084-02B	E-3
			06081084-03B	C-2
			06081084-04B	F-1
			06081084-05B	G-3
			06081084-06B	G-3B
			06081084-07B	G-2
1,2-Dichlorobenzene	ND	5.0		
1,3-Dichlorobenzene	ND	5.0		
1,4-Dichlorobenzene	ND	5.0		
1-Methylnaphthalene	ND	5.0		
2,4-Dimethylphenol	ND	5.0		
2,4-Dinitrophenol	ND	25		
2-Methylnaphthalene	ND	5.0		
4-Nitrophenol	ND	25		
Acenaphthene	ND	5.0		
Acenaphthylene	ND	5.0		
Anthracene	ND	5.0		
Benz(a)anthracene	ND	5.0		
Benzo(a)pyrene	ND	5.0		
Benzo(b)fluoranthene	ND	5.0		
Benzo(g,h,i)perylene	ND	5.0		
Benzo(k)fluoranthene	ND	5.0		
Bis(2-chloroethyl)ether	ND	5.0		
Bis(2-chloroisopropyl)ether	ND	5.0		
Bis(2-ethylhexyl)phthalate	ND	5.0		
Chrysene	ND	5.0		
Dibenz(a,h)acridine	ND	25		
Dibenz(a,h)anthracene	ND	5.0		
Diethyl phthalate	ND	5.0		
Dimethyl phthalate	ND	5.0		
Di-n-butyl phthalate	ND	5.0		
Fluoranthene	ND	5.0		
Fluorene	ND	5.0		
Indene	ND	50		
Indeno(1,2,3-cd)pyrene	ND	5.0		
Naphthalene	ND	5.0		
Phenanthrene	ND	5.0		
Phenol	ND	5.0		
Pyrene	ND	5.0		
Pyridine	ND	5.0		
Quinoline	ND	50		
Thiophenol	ND	50		
2-Methylphenol	ND	5.0		
3 & 4-Methylphenol	ND	5.0		
Surr: 2,4,6-Tribromophenol	69.3	10-123		
Surr: 2-Fluorobiphenyl	98.0	23-116		
Surr: 2-Fluorophenol	57.3	16-110		
Surr: Nitrobenzene-d5	92.0	21-114		
Surr: Phenol-d5	42.7	10-110		
Surr: Terphenyl-d14	92.0	22-141		

Laboratory Control Sample (LCS)

Qualifiers:	ND/U - Not Detected at the Reporting Limit	MI - Matrix Interference
	B - Analyte detected in the associated Method Blank	D - Recovery Unreportable due to Dilution
	J - Estimated value between MDL and PQL	* - Recovery Outside Advisable QC Limits
	N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.	
	TNTC - Too numerous to count	

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:29 AM


Quality Control Report

HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis:	Semivolatile Organics by Method 8270C	WorkOrder:	06081084
Method:	SW8270C	Lab Batch ID:	60064

RunID:	J_060907A-3445969	Units:	ug/L
Analysis Date:	09/07/2006 18:44	Analyst:	S_G
Preparation Date:	08/30/2006 11:19	Prep By:	CGP Method SW3510C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,2-Dichlorobenzene	25.0	22.0	88.0	20	150
1,3-Dichlorobenzene	25.0	22.0	88.0	20	150
1,4-Dichlorobenzene	25.0	22.0	88.0	20	150
1-Methylnaphthalene	25.0	24.0	96.0	30	120
2,4-Dimethylphenol	25.0	20.0	80.0	32	140
2,4-Dinitrophenol	25.0	23.0	92.0	10	160
2-Methylnaphthalene	25.0	24.0	96.0	20	170
4-Nitrophenol	25.0	11.0	44.0	10	132
Acenaphthene	25.0	23.0	92.0	30	150
Acenaphthylene	25.0	23.0	92.0	33	250
Anthracene	25.0	24.0	96.0	27	133
Benz(a)anthracene	25.0	24.0	96.0	33	143
Benzo(a)pyrene	25.0	24.0	96.0	17	163
Benzo(b)fluoranthene	25.0	23.0	92.0	24	159
Benzo(g,h,i)perylene	25.0	22.0	88.0	30	160
Benzo(k)fluoranthene	25.0	24.0	96.0	11	162
Bis(2-chloroethyl)ether	25.0	23.0	92.0	12	158
Bis(2-chloroisopropyl)ether	25.0	24.0	96.0	20	160
Bis(2-ethylhexyl)phthalate	25.0	23.0	92.0	10	158
Chrysene	25.0	23.0	92.0	17	168
Dibenz(a,h)acridine	25.0	23.0	92.0	30	160
Dibenz(a,h)anthracene	25.0	23.0	92.0	30	160
Diethyl phthalate	25.0	21.0	84.0	30	160
Dimethyl phthalate	25.0	21.0	84.0	30	160
Di-n-butyl phthalate	25.0	22.0	88.0	30	160
Fluoranthene	25.0	22.0	88.0	26	137
Fluorene	25.0	23.0	92.0	30	150
Indene	50.0	43.0	86.0	10	170
Indeno(1,2,3-cd)pyrene	25.0	20.0	80.0	30	160
Naphthalene	25.0	23.0	92.0	21	133
Phenanthrene	25.0	24.0	96.0	10	140
Phenol	25.0	12.0	48.0	10	112
Pyrene	25.0	27.0	108	30	150
Pyridine	25.0	7.00	28.0	10	150
Quinoline	25.0	32.0	128	30	150
Thiophenol	50.0	16.0	32.0	10	200

Qualifiers:	ND/U - Not Detected at the Reporting Limit	MI - Matrix Interference
	B - Analyte detected in the associated Method Blank	D - Recovery Unreportable due to Dilution
	J - Estimated value between MDL and PQL	* - Recovery Outside Advisable QC Limits
	N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.	
	TNTC - Too numerous to count	

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

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Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C

WorkOrder: 06081084
Lab Batch ID: 60064

Laboratory Control Sample (LCS)

RunID:	J_060907A-3445969	Units:	ug/L
Analysis Date:	09/07/2006 18:44	Analyst:	S_G
Preparation Date:	08/30/2006 11:19	Prep By:	CGP Method SW3510C

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
2-Methylphenol	25.0	18.0	72.0	30	160
3 & 4-Methylphenol	25.0	18.0	72.0	10	160

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	06081061-02	Units:	mg/L
RunID:	J_060908B-3447853	Analyst:	S_G
Analysis Date:	09/08/2006 23:18	Prep By:	CGP Method SW3510C
Preparation Date:	08/30/2006 11:19		

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,2-Dichlorobenzene	ND	0.025	0.0230	92.0	0.025	0.0210	84.0	9.09	50	20	150
1,3-Dichlorobenzene	ND	0.025	0.0220	88.0	0.025	0.0210	84.0	4.65	50	20	150
1,4-Dichlorobenzene	ND	0.025	0.0220	88.0	0.025	0.0210	84.0	4.65	45	20	150
1-Methylnaphthalene	ND	0.025	0.0240	96.0	0.025	0.0230	92.0	4.26	50	30	120
2,4-Dimethylphenol	ND	0.025	0.0210	84.0	0.025	0.0200	80.0	4.88	50	32	140
2,4-Dinitrophenol	ND	0.025	0.0270	108	0.025	0.0250	100	7.69	50	10	160
2-Methylnaphthalene	ND	0.025	0.0250	100	0.025	0.0230	92.0	8.33	50	20	170
4-Nitrophenol	ND	0.025	0.0170	68.0	0.025	0.0160	64.0	6.06	50	10	132
Acenaphthene	ND	0.025	0.0250	100	0.025	0.0240	96.0	4.08	31	30	150
Acenaphthylene	ND	0.025	0.0230	92.0	0.025	0.0210	84.0	9.09	50	33	250
Anthracene	ND	0.025	0.0260	104	0.025	0.0250	100	3.92	50	27	133
Benz(a)anthracene	ND	0.025	0.0250	100	0.025	0.0240	96.0	4.08	50	33	143
Benzo(a)pyrene	ND	0.025	0.0260	104	0.025	0.0250	100	3.92	50	17	163
Benzo(b)fluoranthene	ND	0.025	0.0260	104	0.025	0.0250	100	3.92	50	24	159
Benzo(g,h,i)perylene	ND	0.025	0.0250	100	0.025	0.0240	96.0	4.08	50	30	160
Benzo(k)fluoranthene	ND	0.025	0.0260	104	0.025	0.0250	100	3.92	50	11	162
Bis(2-chloroethyl)ether	0.0490	0.025	0.0460	-12.0 *	0.025	0.0420	-28.0 *	9.09	50	12	158
Bis(2-chloroisopropyl)ether	0.00900	0.025	0.0280	76.0	0.025	0.0250	64.0	11.3	50	20	160
Bis(2-ethylhexyl)phthalate	ND	0.025	0.0250	100	0.025	0.0250	100	0	50	10	158
Chrysene	ND	0.025	0.0250	100	0.025	0.0250	100	0	50	17	168
Dibenz(a,h)acridine	ND	0.025	0.0250	100	0.025	0.0240	96.0	4.08	50	30	160

- Qualifiers:** ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:29 AM


Quality Control Report

HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Semivolatile Organics by Method 8270C
Method: SW8270C

WorkOrder: 06081084
Lab Batch ID: 60064

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081061-02
 RunID: J_060908B-3447853 Units: mg/L
 Analysis Date: 09/08/2006 23:18 Analyst: S_G
 Preparation Date: 08/30/2006 11:19 Prep By: CGP Method SW3510C

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Dibenz(a,h)anthracene	ND	0.025	0.0250	100	0.025	0.0240	96.0	4.08	50	30	160
Diethyl phthalate	ND	0.025	0.0230	88.0	0.025	0.0220	84.0	4.44	50	30	160
Dimethyl phthalate	ND	0.025	0.0230	92.0	0.025	0.0220	88.0	4.44	50	30	160
Di-n-butyl phthalate	ND	0.025	0.0240	96.0	0.025	0.0230	92.0	4.26	50	30	160
Fluoranthene	ND	0.025	0.0240	96.0	0.025	0.0220	88.0	8.70	50	26	137
Fluorene	ND	0.025	0.0240	96.0	0.025	0.0220	88.0	8.70	50	30	150
Indene	ND	0.05	0.0430	86.0 *	0.05	0.0390	78.0 *	9.76 *	0	0	0
Indeno(1,2,3-cd)pyrene	ND	0.025	0.0210	84.0	0.025	0.0200	80.0	4.88	50	30	160
Naphthalene	ND	0.025	0.0310	124	0.025	0.0290	116	6.67	50	21	133
Phenanthrene	ND	0.025	0.0260	104	0.025	0.0250	100	3.92	50	10	140
Phenol	ND	0.025	0.0190	76.0	0.025	0.0170	68.0	11.1	42	10	112
Pyrene	ND	0.025	0.0290	116	0.025	0.0290	116	0	31	30	150
Pyridine	ND	0.025	0.0140	56.0	0.025	0.00700	28.0	66.7 *	50	10	150
Quinoline	ND	0.025	0.0320	128	0.025	0.0300	120	6.45	50	30	150
Thiophenol	ND	0.05	0	0 *	0.05	0	0 *	0	50	10	200
2-Methylphenol	ND	0.025	0.0220	88.0	0.025	0.0210	84.0	4.65	50	30	160
3 & 4-Methylphenol	ND	0.025	0.0220	88.0	0.025	0.0210	84.0	4.65	50	10	160

Qualifiers: ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

06081084 Page 43

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:29 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 06081084
Lab Batch ID: R178365

Method Blank

RunID: L_060828A-3432028 Units: ug/L

Analysis Date: 08/28/2006 12:30 Analyst: LT

Preparation Date: 08/28/2006 12:30 Prep By: Method

Samples in Analytical Batch:

<u>Lab Sample ID</u>	<u>Client Sample ID</u>
06081084-01A	D-2
06081084-02A	E-3
06081084-03A	C-2
06081084-04A	F-1
06081084-05A	G-3
06081084-06A	G-3B
06081084-07A	G-2
06081084-11A	TRIP BLANK #1

Analyte	Result	Rep Limit
1,1,1-Trichloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2-Dibromoethane	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,4-Dioxane	ND	200
2-Butanone	ND	10
Benzene	ND	5.0
Carbon disulfide	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	5.0
Chloroform	ND	5.0
Ethylbenzene	ND	5.0
Methyl tert-butyl ether	ND	5.0
Styrene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Vinyl chloride	ND	2.0
m,p-Xylene	ND	5.0
o-Xylene	ND	5.0
1,2-Dichloroethene (total)	ND	5.0
Xylenes,Total	ND	5.0
Surr: 1,2-Dichloroethane-d4	96.0	62-130
Surr: 4-Bromofluorobenzene	100.0	70-130
Surr: Toluene-d8	102.0	74-122

Laboratory Control Sample (LCS)

RunID: L_060828A-3432027 Units: ug/L
Analysis Date: 08/28/2006 11:17 Analyst: LT
Preparation Date: 08/28/2006 11:17 Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,1,1-Trichloroethane	50.0	42.0	84.0	66	132
1,1,2-Trichloroethane	50.0	45.0	90.0	79	135
1,1-Dichloroethane	50.0	48.0	96.0	67	131
1,1-Dichloroethene	50.0	45.0	90.0	71	146

Qualifiers: ND/U - Not Detected at the Reporting Limit
B - Analyte detected in the associated Method Blank
J - Estimated value between MDL and PQL
N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
TNTC - Too numerous to count

MI - Matrix Interference
D - Recovery Unreportable due to Dilution
* - Recovery Outside Advisable QC Limits

06081084 Page 44

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:30 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 06081084
Lab Batch ID: R178365

Laboratory Control Sample (LCS)

RunID:	L_060828A-3432027	Units:	ug/L
Analysis Date:	08/28/2006 11:17	Analyst:	LT
Preparation Date:	08/28/2006 11:17	Prep By:	Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
1,2,3-Trichloropropane	50.0	50.0	100	70	145
1,2-Dibromoethane	50.0	47.0	94.0	77	130
1,2-Dichloroethane	50.0	47.0	94.0	64	150
1,2-Dichloropropane	50.0	46.0	92.0	76	124
1,4-Dioxane	2000	1800	90.0	41	148
2-Butanone	50.0	47.0	94.0	20	235
Benzene	50.0	46.0	92.0	76	126
Carbon disulfide	50.0	36.0	72.0	56	144
Chlorobenzene	50.0	48.0	96.0	78	125
Chloroethane	50.0	44.0	88.0	64	133
Chloroform	50.0	44.0	88.0	70	135
Ethylbenzene	50.0	45.0	90.0	76	122
Methyl tert-butyl ether	100	81.0	81.0	58	140
Styrene	50.0	43.0	86.0	60	139
Tetrachloroethene	50.0	42.0	84.0	26	200
Toluene	50.0	47.0	94.0	70	131
Trichloroethene	50.0	49.0	98.0	64	137
Vinyl chloride	50.0	46.0	92.0	31	147
m,p-Xylene	100	90.0	90.0	72	150
o-Xylene	50.0	46.0	92.0	78	141
1,2-Dichloroethene (total)	100	85	85	73	139
Xylenes, Total	150	136	90.7	72	150

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked:	06081084-01	RunID:	L_060828A-3432031	Units:	ug/L
Analysis Date:	08/28/2006 17:09	Analyst:	LT		

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,1-Trichloroethane	ND	50	36.0	72.0	50	34.0	68.0	5.71	20	35	175

Qualifiers: ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

06081084 Page 45

The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:30 AM


Quality Control Report

HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TX 77054
 (713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 06081084
Lab Batch ID: R178365

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081084-01
 RunID: L_060828A-3432031 Units: ug/L
 Analysis Date: 08/28/2006 17:09 Analyst: LT

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
1,1,2-Trichloroethane	ND	50	44.0	88.0	50	41.0	82.0	7.06	20	35	175
1,1-Dichloroethane	ND	50	45.0	90.0	50	42.0	84.0	6.90	20	35	175
1,1-Dichloroethene	ND	50	38.0	76.0	50	37.0	74.0	2.67	14	61	145
1,2,3-Trichloropropane	ND	50	46.0	92.0	50	45.0	90.0	2.20	20	35	175
1,2-Dibromoethane	ND	50	45.0	90.0	50	45.0	90.0	0	20	35	175
1,2-Dichloroethane	ND	50	45.0	90.0	50	42.0	84.0	6.90	20	35	175
1,2-Dichloropropane	ND	50	45.0	90.0	50	43.0	86.0	4.55	20	35	175
1,4-Dioxane	ND	2000	1900	95.0	2000	2000	100	5.13	20	40	150
2-Butanone	ND	50	45.0	90.0	50	44.0	88.0	2.25	20	10	230
Benzene	ND	50	43.0	86.0	50	41.0	82.0	4.76	11	76	127
Carbon disulfide	ND	50	38.0	76.0	50	35.0	70.0	8.22	20	30	225
Chlorobenzene	ND	50	44.0	88.0	50	42.0	84.0	4.65	13	70	130
Chloroethane	ND	50	42.0	84.0	50	40.0	80.0	4.88	20	35	175
Chloroform	ND	50	41.0	82.0	50	40.0	80.0	2.47	20	35	175
Ethylbenzene	ND	50	42.0	84.0	50	39.0	78.0	7.41	20	35	175
Methyl tert-butyl ether	ND	50	47.0	86.0	50	45.0	82.0	4.35	20	35	175
Styrene	ND	50	42.0	84.0	50	38.0	76.0	10.0	20	35	175
Tetrachloroethene	ND	50	36.0	72.0	50	32.0	64.0	11.8	20	30	250
Toluene	ND	50	43.0	86.0	50	41.0	82.0	4.76	13	70	131
Trichloroethene	ND	50	44.0	88.0	50	42.0	84.0	4.65	14	60	140
Vinyl chloride	ND	50	49.0	98.0	50	44.0	88.0	10.8	20	35	175
m,p-Xylene	ND	100	82.0	82.0	100	76.0	76.0	7.59	20	35	175
o-Xylene	ND	50	43.0	86.0	50	39.0	78.0	9.76	20	35	175
1,2-Dichloroethene (total)	ND	100	79	79	100	75	75	5.2	20	35	175
Xylenes,Total	ND	150	125	83.3	150	115	76.7	8.33	20	35	175

Qualifiers: ND/U - Not Detected at the Reporting Limit
 B - Analyte detected in the associated Method Blank
 J - Estimated value between MDL and PQL
 N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.
 TNTC - Too numerous to count

MI - Matrix Interference
 D - Recovery Unreportable due to Dilution
 * - Recovery Outside Advisable QC Limits

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:30 AM



Quality Control Report

HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Huntsman Petrochemical Corporation

Huntsman/LA002348

Analysis: Volatile Organics by Method 8260B
Method: SW8260B

WorkOrder: 06081084
Lab Batch ID: R178622

Method Blank

Samples in Analytical Batch:

RunID: L_060829E-3436565	Units: ug/L	<u>Lab Sample ID</u>	<u>Client Sample ID</u>
Analysis Date: 08/29/2006 12:15	Analyst: LT	06081084-05A	G-3
Preparation Date: 08/29/2006 12:15	Prep By: Method		

Analyte	Result	Rep Limit
Benzene	ND	5.0
Surr: 1,2-Dichloroethane-d4	94.0	62-130
Surr: 4-Bromofluorobenzene	100.0	70-130
Surr: Toluene-d8	100.0	74-122

Laboratory Control Sample (LCS)

RunID: L_060829E-3436564	Units: ug/L
Analysis Date: 08/29/2006 11:09	Analyst: LT
Preparation Date: 08/29/2006 11:09	Prep By: Method

Analyte	Spike Added	Result	Percent Recovery	Lower Limit	Upper Limit
Benzene	50.0	46.0	92.0	76	126

Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Sample Spiked: 06081064-01	
RunID: L_060829E-3436568	Units: ug/L
Analysis Date: 08/29/2006 13:43	Analyst: LT

Analyte	Sample Result	MS Spike Added	MS Result	MS % Recovery	MSD Spike Added	MSD Result	MSD % Recovery	RPD	RPD Limit	Low Limit	High Limit
Benzene	ND	50	47.0	94.0	50	45.0	90.0	4.35	11	76	127

Qualifiers:	ND/U - Not Detected at the Reporting Limit	MI - Matrix Interference
	B - Analyte detected in the associated Method Blank	D - Recovery Unreportable due to Dilution
	J - Estimated value between MDL and PQL	* - Recovery Outside Advisable QC Limits
	N/C - Not Calculated - Sample concentration is greater than 4 times the amount of spike added. Control limits do not apply.	
	TNTC - Too numerous to count	

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The percent recoveries for QC samples are correct as reported. Due to significant figures and rounding, the reported RPD may differ from the displayed RPD values but is correct as reported.

9/13/2006 8:43:30 AM

Sample Receipt Checklist
And
Chain of Custody



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TX 77054
(713) 660-0901

Sample Receipt Checklist

Workorder:	06081084	Received By:	RE
Date and Time Received:	8/26/2006 10:00:00 AM	Carrier name:	Fedex-Priority
Temperature:	2.0°C	Chilled by:	Water Ice

- | | | | |
|---|---|--|---|
| 1. Shipping container/cooler in good condition? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 2. Custody seals intact on shipping container/cooler? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/> |
| 3. Custody seals intact on sample bottles? | Yes <input type="checkbox"/> | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| 4. Chain of custody present? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 5. Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 6. Chain of custody agrees with sample labels?
1. Received 2-sets of Trip Blanks not written on Chain of Custody
login on hold | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 7. Samples in proper container/bottle? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 8. Sample containers intact?
2. Received broken 1-40ml vial Sample ID:G-3B for 8260. | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> | |
| 9. Sufficient sample volume for indicated test? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 10. All samples received within holding time? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 11. Container/Temp Blank temperature in compliance? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | |
| 12. Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | VOA Vials Not Present <input type="checkbox"/> |
| 13. Water - Preservation checked upon receipt (except VOA*)? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Applicable <input type="checkbox"/> |

*VOA Preservation Checked After Sample Analysis

SPL Representative: Brown, Electa

Contact Date & Time: 8/28/2006 9:45:00 AM

Client Name Contacted: David Toler

Non Conformance Issues:
1.Login Trip Blanks on hold. 2. 2-40ml vials left for analysis.

Client Instructions: 1.Per client only run one set of trip blank. 2.Client is aware of the 1 broken voa vial, leaving 2 voa to run the 8260 analyses requested.



Laboratory Task Order No./P.O. No.

06081084

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Project Number/Name LA002348/Hudson

Project Location

Laboratory

Project Manager John Ellis

Sampler(s)/Affiliation J. Prakash/Arcadis

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE								Remarks	Total	
				Vol.	Temp	Specimen	Method	Date	Time	Method	Date	Time		
D-2	L	8/24/06 11:15	3											7
E-3	L	" 12:55	3											7
G-2	L	" 15:45	3											7
F-1	L	" 17:47	3											7
G-3	L	8/25/06 10:35	3											7
G-3B	L	" 10:00	3											7
G-2	L	" 10:35	3											7
API-GP-15B(24)	S	" 08:55												2
API-GP-05B(04)	S	" 08:31												2
API-GP-05B(40)	S	" 08:45												2
TRIPOLYANX	L	6:43	2											2
														20

Sample Matrix: L = Liquid S = Solid; A = Air

Total No. of Bottles/Containers

57

Relinquished by:	Organization:	Date	Time	Seal Intact?
Received by:	Organization:	Date	Time	Yes No N/A
Relinquished by:	Organization:	Date	Time	Seal Intact?
Received by:	Organization:	Date	Time	Yes No N/A

Special Instructions/Remarks:

Delivery Method: In Person Common Carrier FED-EX
SPECIFY Lab Courier Other

SPECIFY

bif

A-ZONE CLASS DISCUSSION FROM APAR

Section 2.5 Groundwater Resource Classification

In accordance with the Groundwater Classification (RG-366/TRRP-8) estimations of the well yield for the “A-Zone” and “B-Zone” were calculated using site specific inputs.

Method 1 was utilized to calculate the yield for each zone. The confined aquifer equations for both 4” and 12” wells were used. The input parameters and calculated yields for the “A-Zone” and “B-Zone” calculations are summarized below:

Parameter	“A-Zone”	“B-Zone”
Saturated Thickness (b)	8.5 ft (average thickness)	50 ft (known thickness)
Hydraulic Conductivity (K)	1.49×10^{-3} cm/sec	5.90×10^{-3} cm/sec
Mean Annual Confining Head (h_c)	14 ft (average h_c)	64 ft (average h_c)
Sustainable Yield (4” well)	2,466 gallons per day (gpd)	226,259 gpd
Sustainable Yield (12” well)	2,775 gpd	249,478 gpd

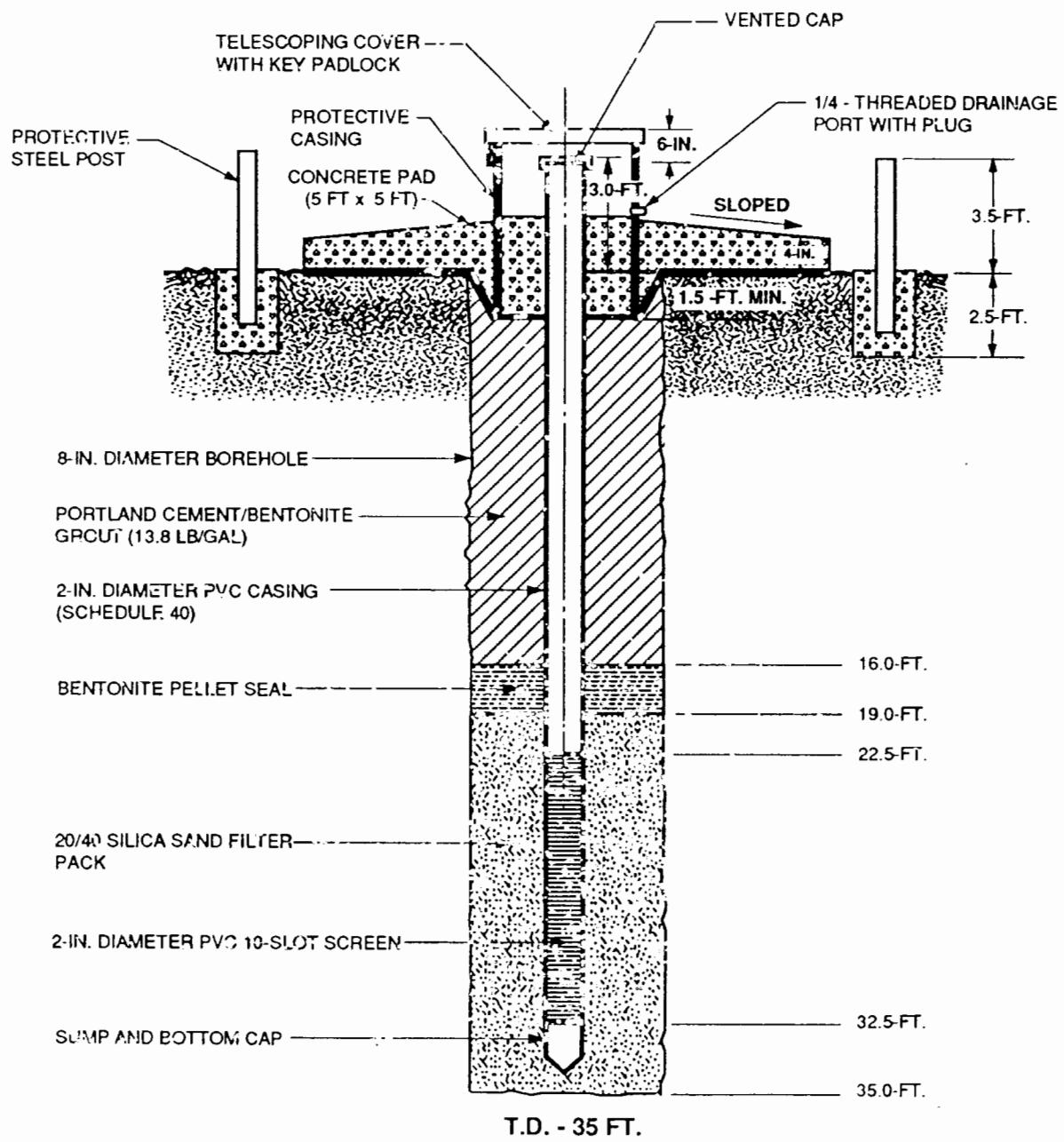
Based on the calculated sustainable well yield, TDS concentrations, and existing use of the aquifers, the “A-Zone” is classified as a Class 2 groundwater bearing zone and the “B-Zone” is classified as a Class 1 groundwater bearing zone.

MONITOR WELL CONSTRUCTION DIAGRAMS



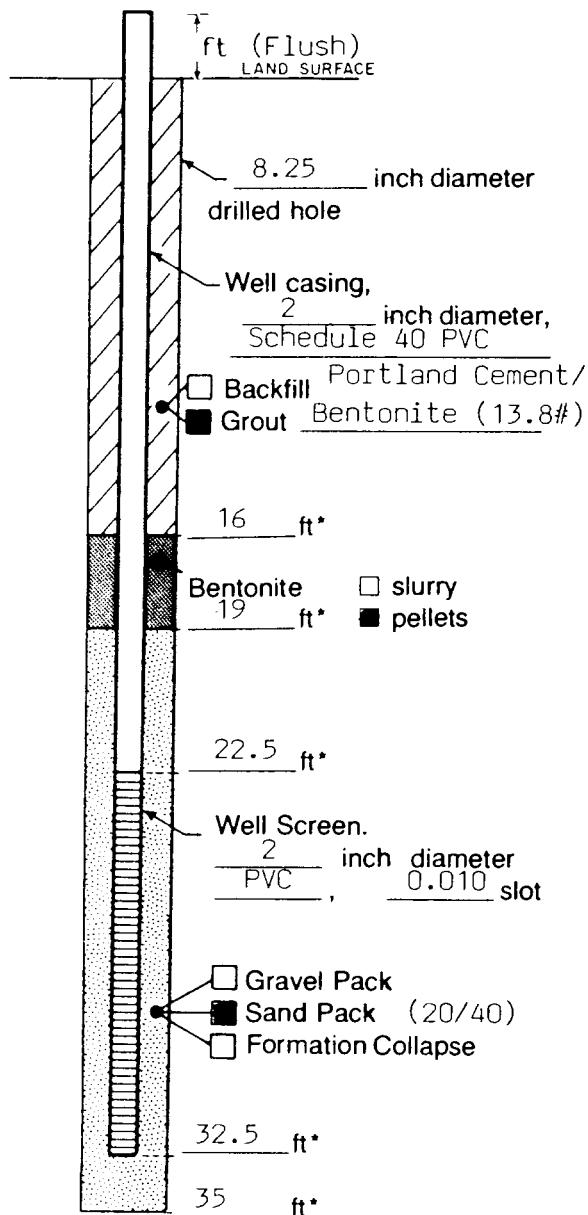
MONITOR-WELL CONSTRUCTION
DIAGRAM
RFI-1

PROJECT:
TEXACO CHEMICAL COMPANY
Port Neches, Texas



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

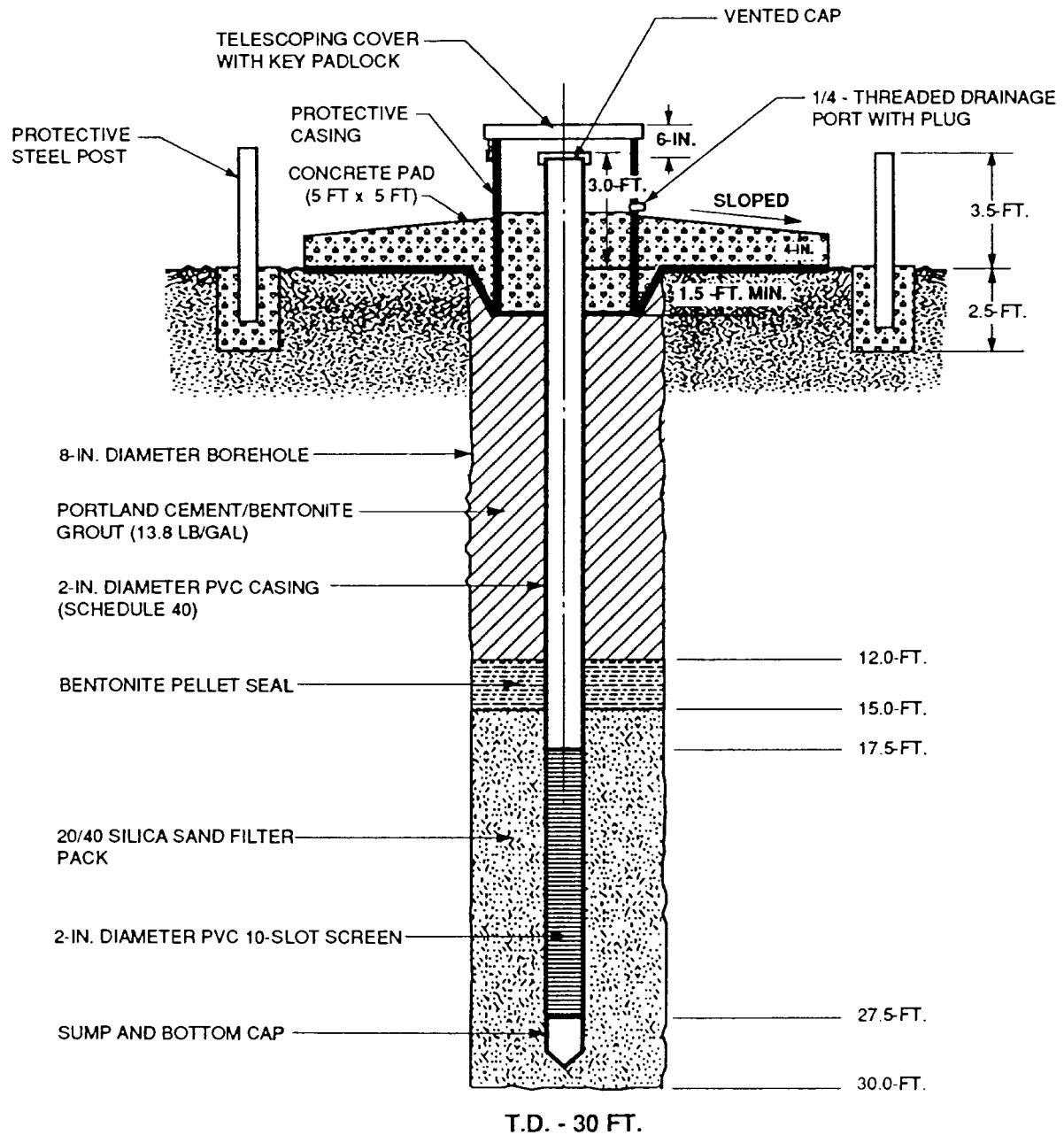
*Depth Below Land Surface

Project	Texaco Chemical LA524.01	Well	RFI-1
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	1-10 thru 11-92		
Drilling Method	Hollow Stem Auger		
Drilling Contractor	Layne Environmental		
Drilling Fluid	None		
Development Technique(s) and Date(s) Hand bailed on 2-10-92			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	10	gallons	
Static Depth to Water	feet below M.P.		
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose			
Remarks	RFI monitor well		
Prepared by Trey Harrel			



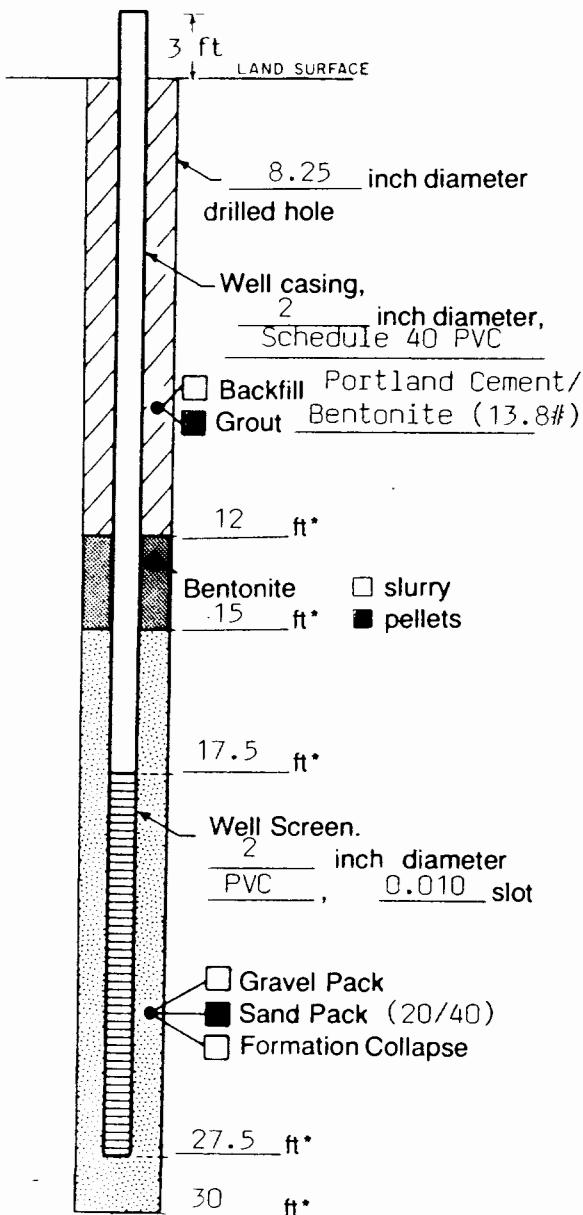
MONITOR-WELL CONSTRUCTION
DIAGRAM
RFI-9

PROJECT:
TEXACO CHEMICAL COMPANY
Port Neches, Texas



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



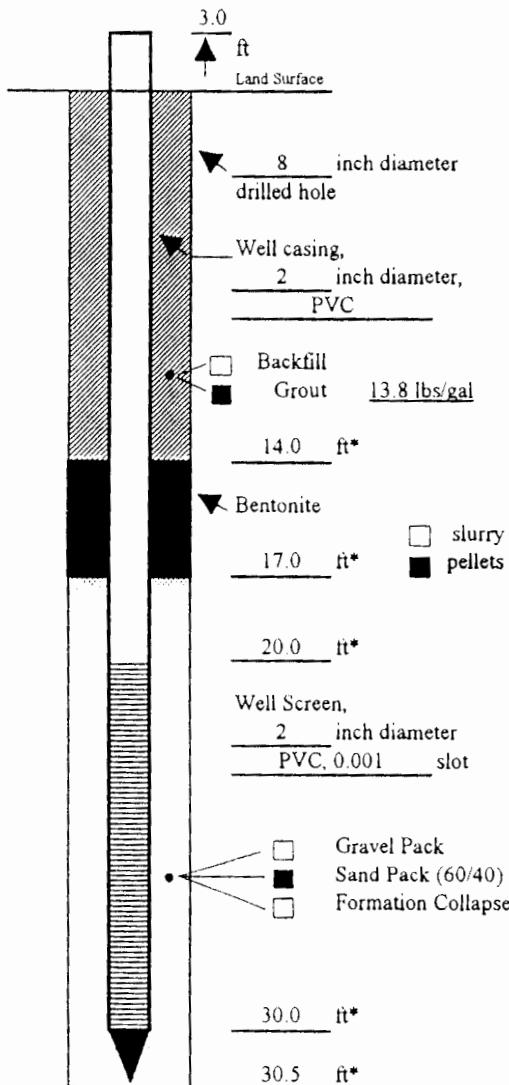
Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project	Texaco Chemical LA524.01	Well	RFI-9
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	2-1-92		
Drilling Method	Hollow Stem Auger		
Drilling Contractor	Layne Environmental		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
Hand bailed on 2-10-92			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	15 gallons		
Static Depth to Water	feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	RFI Monitor Well		
Remarks			

Prepared by Trey Harrel

WELL CONSTRUCTION DIAGRAM
 (UNCONSOLIDATED)



Measuring Point is Top of Well Casing Unless Otherwise Noted.

* Depth Below Land Surface

Project	Huntsman Petrochemical Corporation - LA001696.0001	Well	RFI-9R
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit Number	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input checked="" type="checkbox"/> Estimated

Installation Date(s)	6/10/98
Drilling Method	Hollow Stem
Drilling Contractor	CCI Enviro Drilling
Drilling Fluid	None

Development Technique(s) and Date(s)	Disposable polyethylene bailer (6/12/98)

Fluid Loss During Drilling	NA	gallons
Water Removed During Development	20	gallons
Static Depth to Water	8.1	feet below M.P.
Pumping Depth to Water	NA	feet below M.P.
Pumping Duration	NA	hours
Yield	NA	Date
Specific Capacity	NA	6/12/98
Well Purpose	Monitor Well	gpm/ft

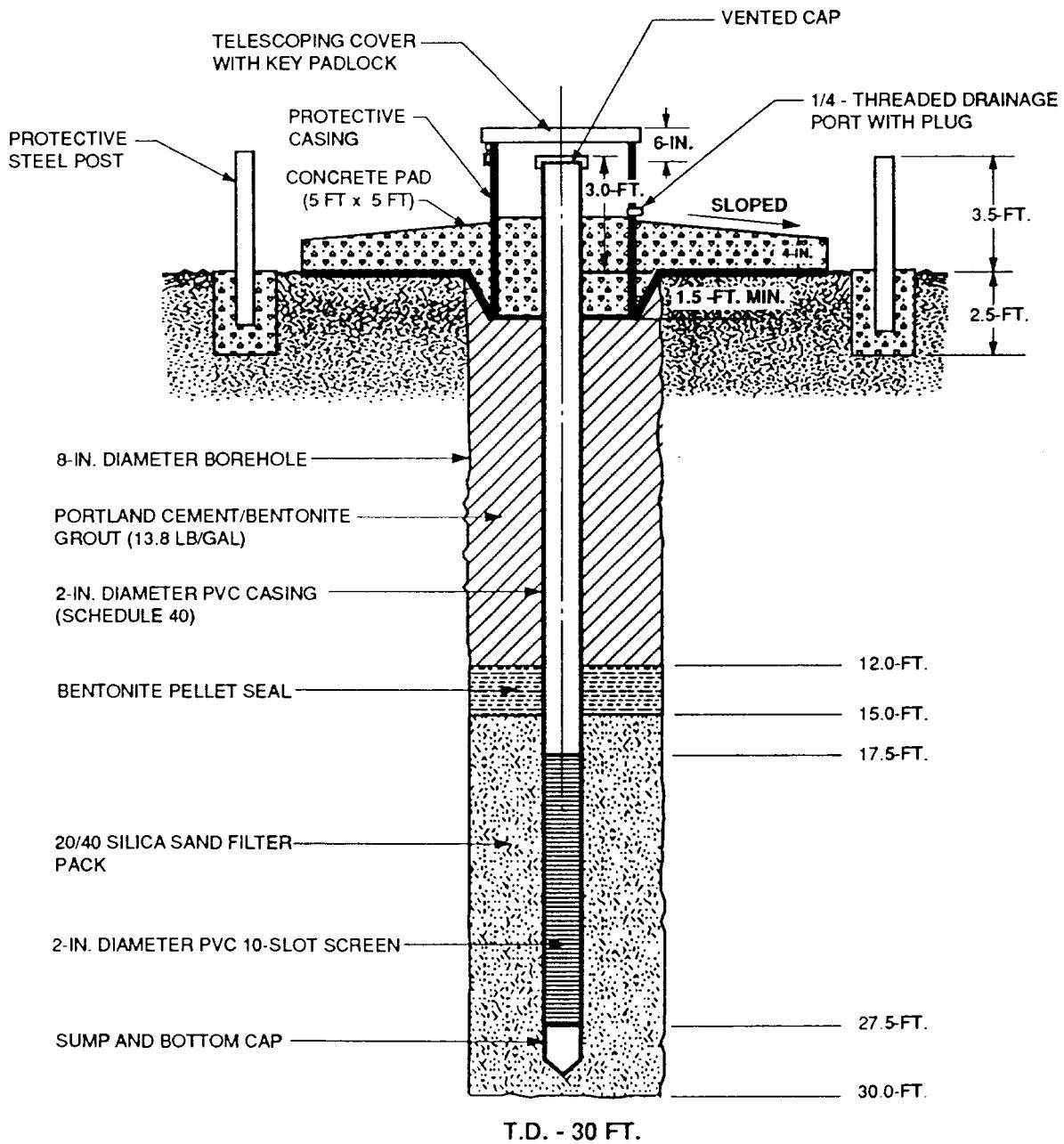
Remarks	Replacement well for RFI-9.

Prepared by George Cook



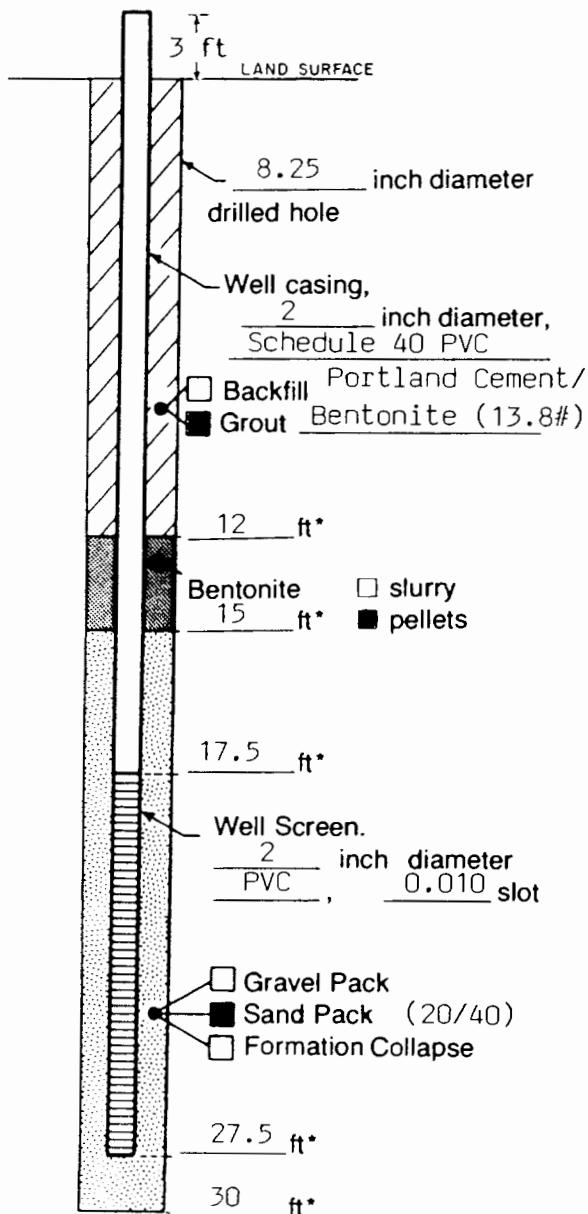
MONITOR-WELL CONSTRUCTION
DIAGRAM
RFI-10

PROJECT:
TEXACO CHEMICAL COMPANY
Port Neches, Texas



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)

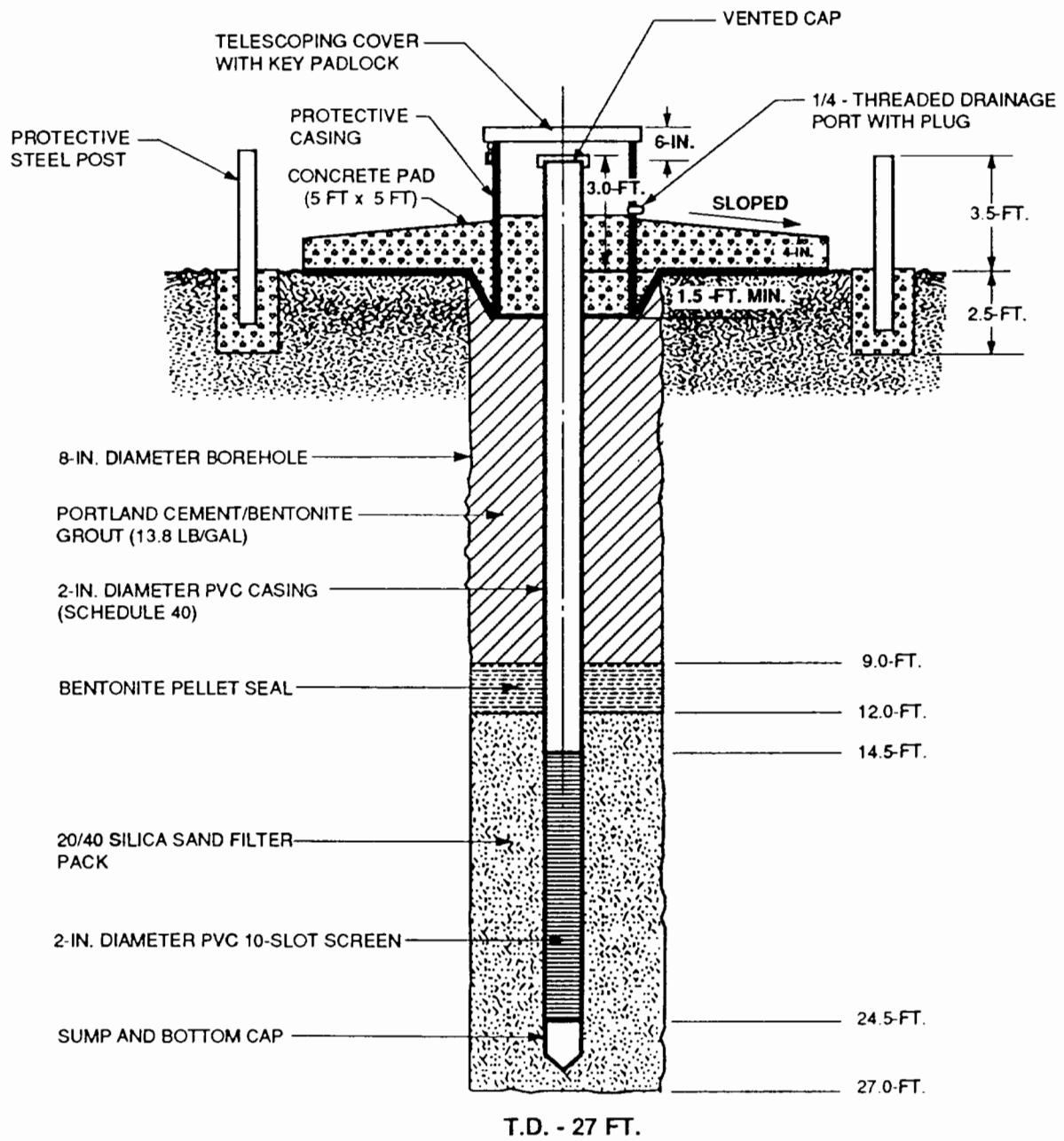


Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

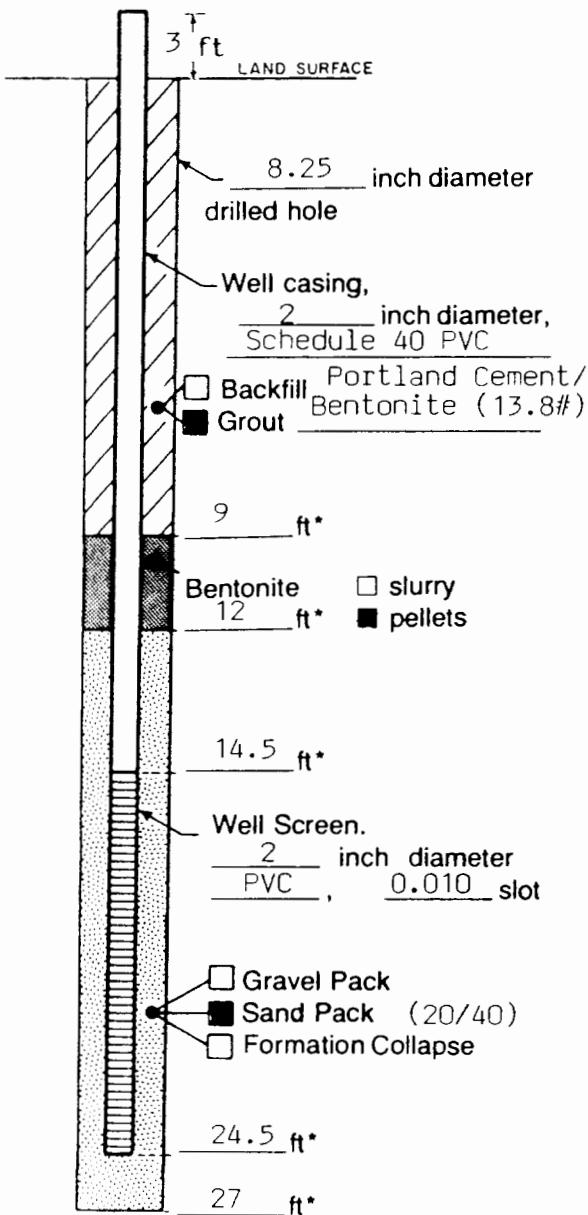
Project	Texaco Chemical LA524.01	Well	RFI-10
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	2-2-92		
Drilling Method	Hollow Stem Auger		
Drilling Contractor	Layne Environmental		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
hand bailed on 2-10-92			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	10 gallons		
Static Depth to Water	feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA	gpm	Date NA
Specific Capacity	NA gpm/ft		
Well Purpose	RFI Monitor Well		
Remarks			

Prepared by Trey Harrel



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)

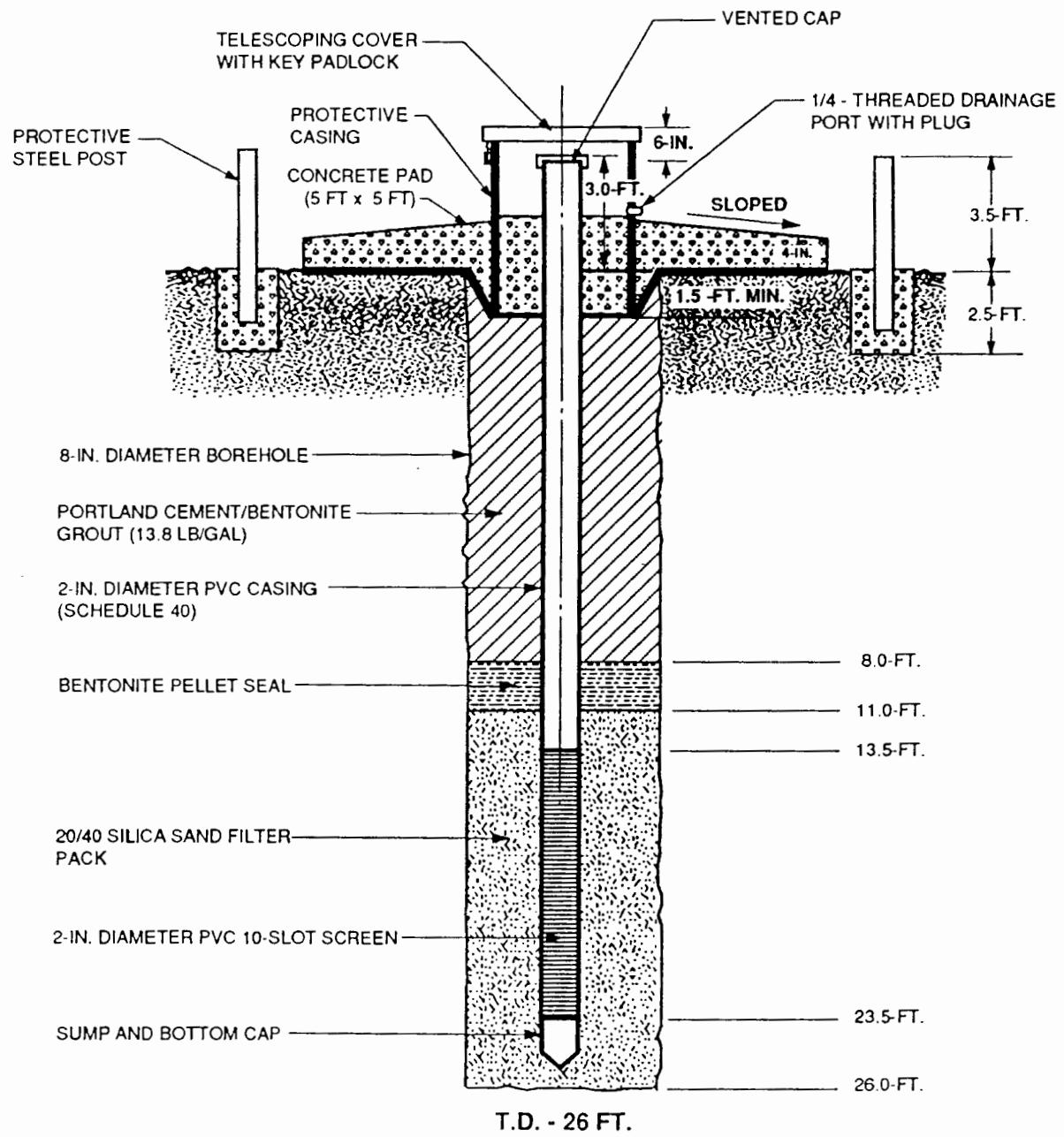


Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

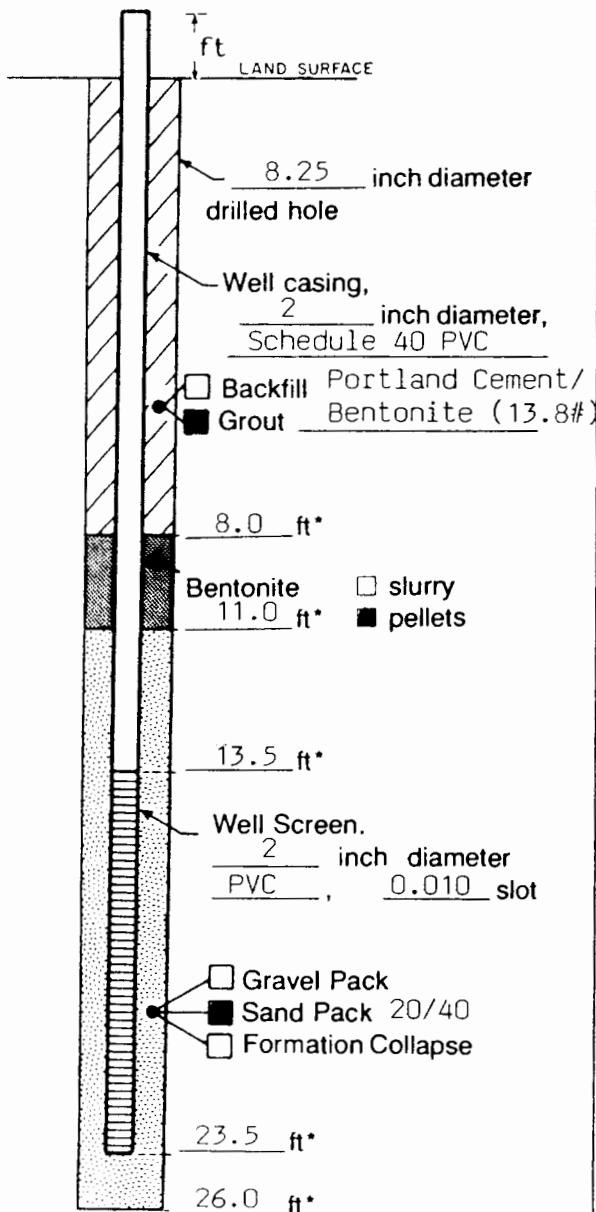
Project	Texaco Chemical LA524.01	Well	RFI-11
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	2-8-92		
Drilling Method	Hollow Stem Auger		
Drilling Contractor	Layne Environmental		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
Hand bailed on 2-10-92			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	12	gallons	
Static Depth to Water	feet below M.P.		
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	
Specific Capacity	NA	gpm/ft	
Well Purpose	RFI Monitor Well		
Remarks			

Prepared by Trey Harrel



WELL CONSTRUCTION LOG

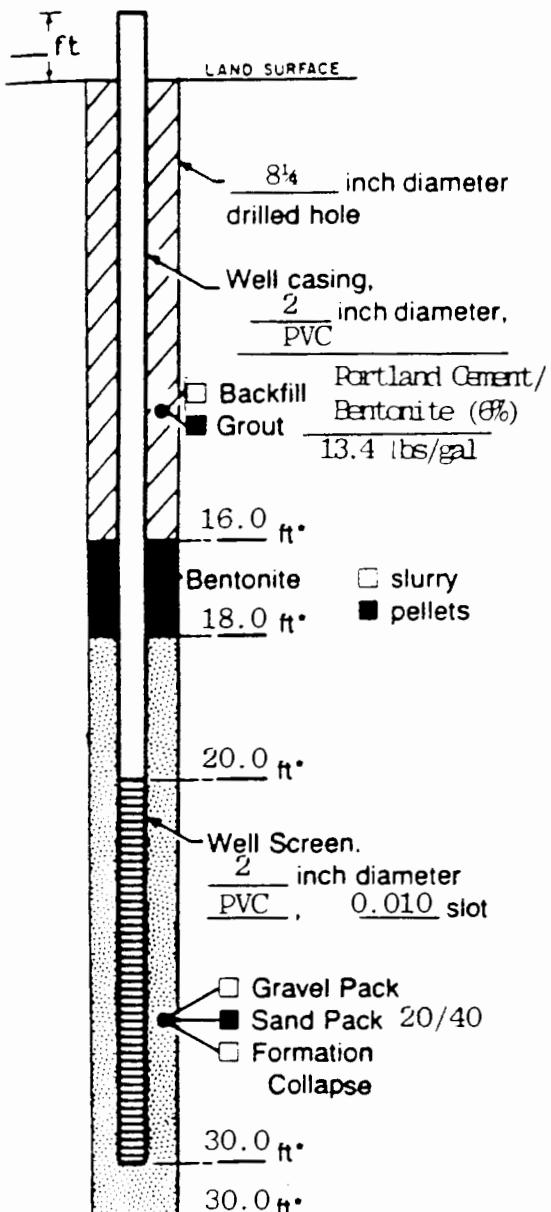
(UNCONSOLIDATED)



Project	Texaco Chemical LA524.01	Well	RFI-12
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	4-16-92		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
NA			
Fluid Loss During Drilling	None gallons		
Water Removed During Development	NA gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA	gpm	Date NA
Specific Capacity	NA gpm/ft		
Well Purpose	RFI monitor well		
Remarks			

Prepared by T. Harrel

WELL CONSTRUCTION LOG



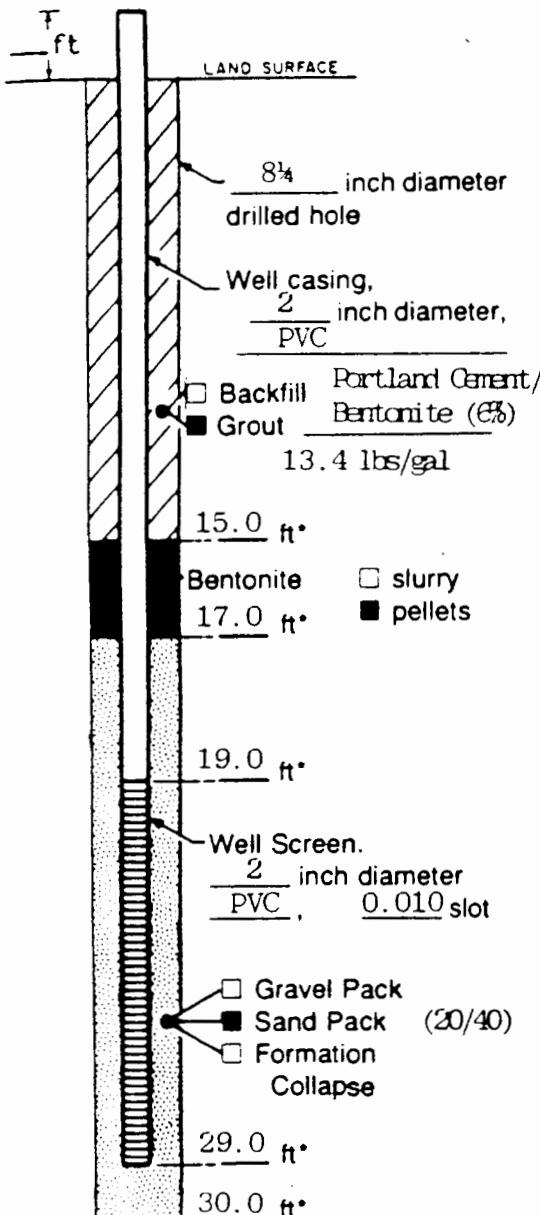
Measuring Point is Top of
Well Casing Unless Otherwise
Noted.

*Depth Below
Land Surface

Project	LA282.01 - Texaco	Well	MW-1
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-22-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	None		
Development Techniques(s) and Date(s)			
Airlift - 9-14-90			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	108	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by Kipper W. Montgomery

WELL CONSTRUCTION LOG



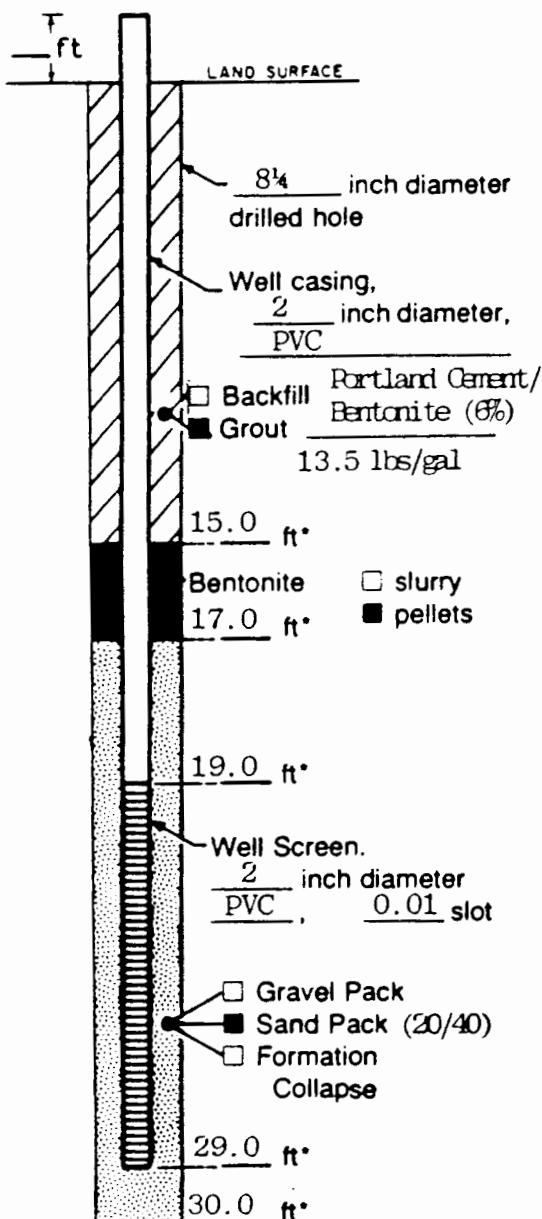
Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-2
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-23-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	None		
Development Techniques(s) and Date(s)			
Airlift 9-14-90			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	78	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	0.25	hours	
Yield	NA	gpm	
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by _____ Kipper W. Montgomery

WELL CONSTRUCTION LOG



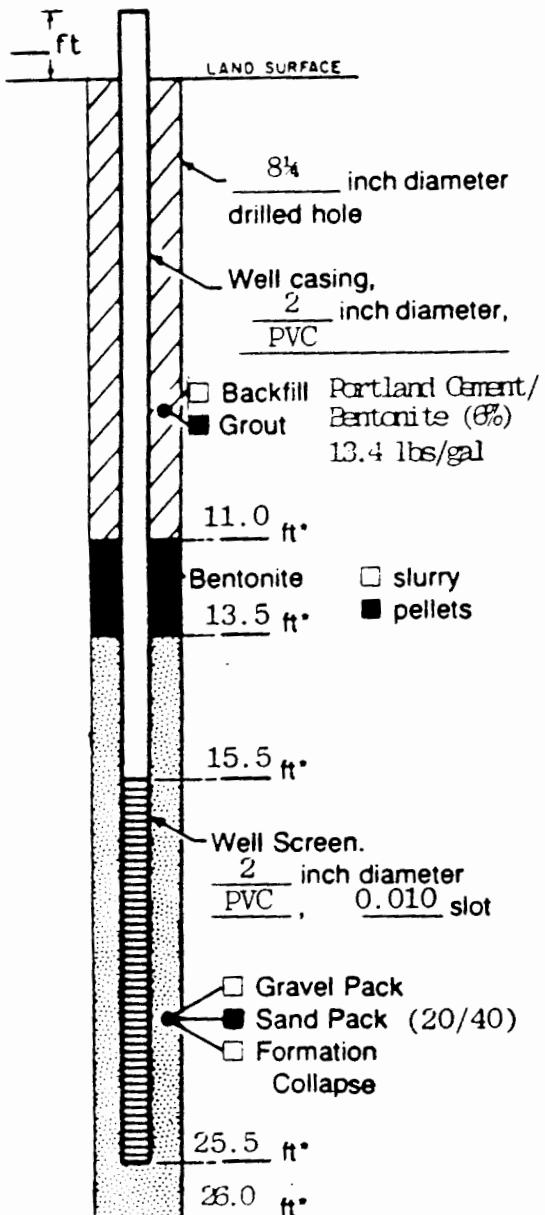
Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-4
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-24-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
Air Lift 9-14-90			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	40 gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	0.45 hours		
Yield	NA gpm	Date	NA
Specific Capacity	NA gpm/ft		
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by _____ Kipper W. Montgomery

WELL CONSTRUCTION LOG

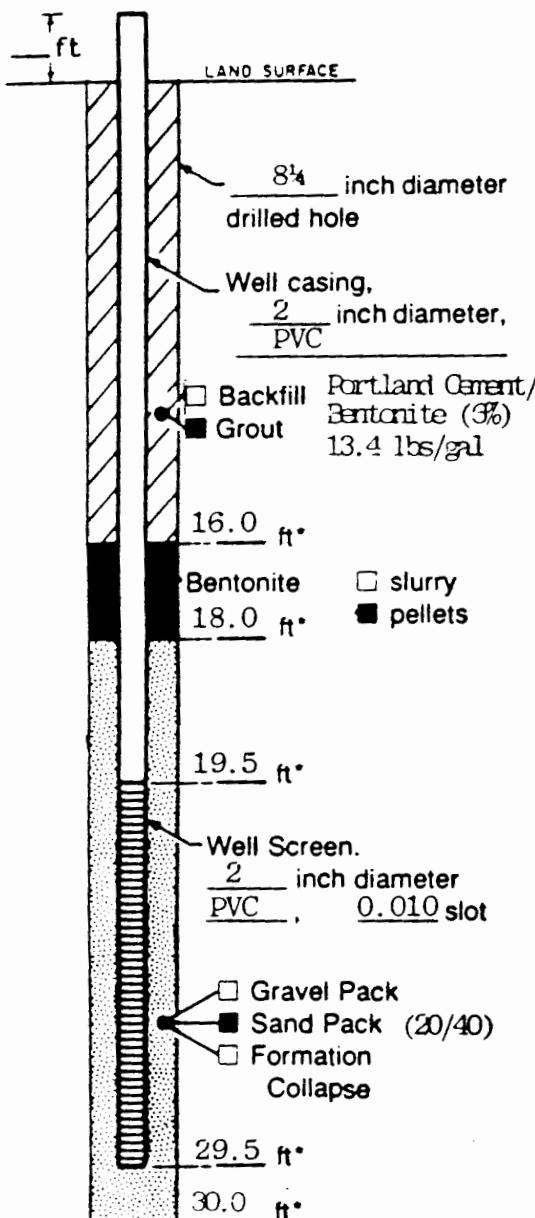


Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	Texaco - LA282.01	Well	MW-5
Town/City	Port Neches		
County	Jefferson State Texas		
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-25-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
9-25-90 Airlift			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	200	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	1.0	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

WELL CONSTRUCTION LOG

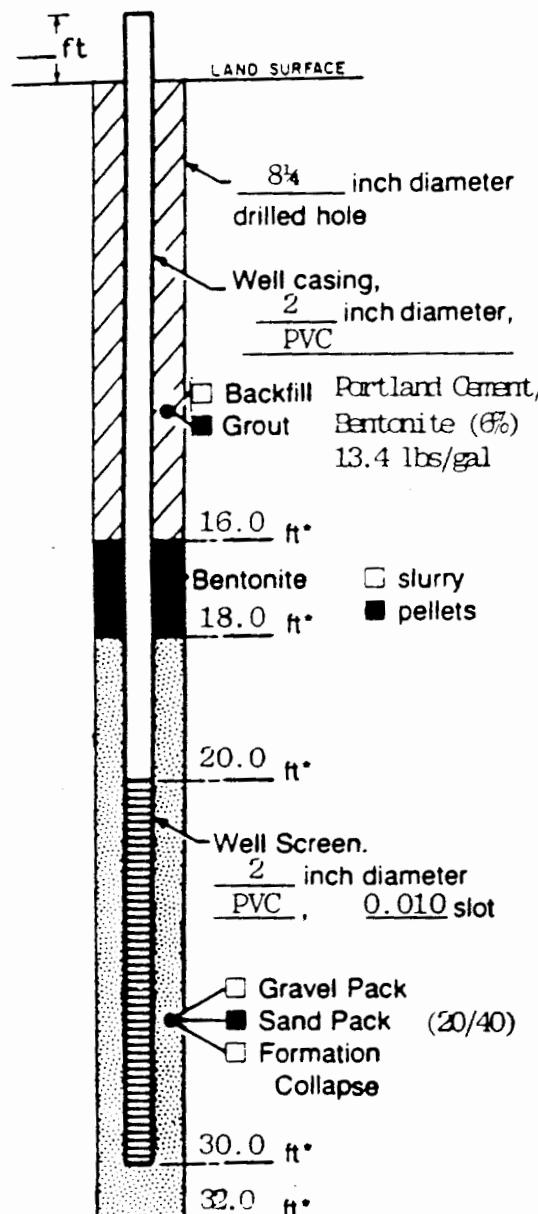


Measuring Point is Top of
Well Casing Unless Otherwise
Noted.

*Depth Below
Land Surface

Project	LA282.01 - Texaco	Well	MW-6
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-25-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
NA			
Fluid Loss During Drilling	NA		gallons
Water Removed During Development	40		gallons
Static Depth to Water	NA		feet below M.P.
Pumping Depth to Water	NA		feet below M.P.
Pumping Duration	0.45		hours
Yield	NA	gpm	Date NA
Specific Capacity	NA		gpm/ft
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

WELL CONSTRUCTION LOG

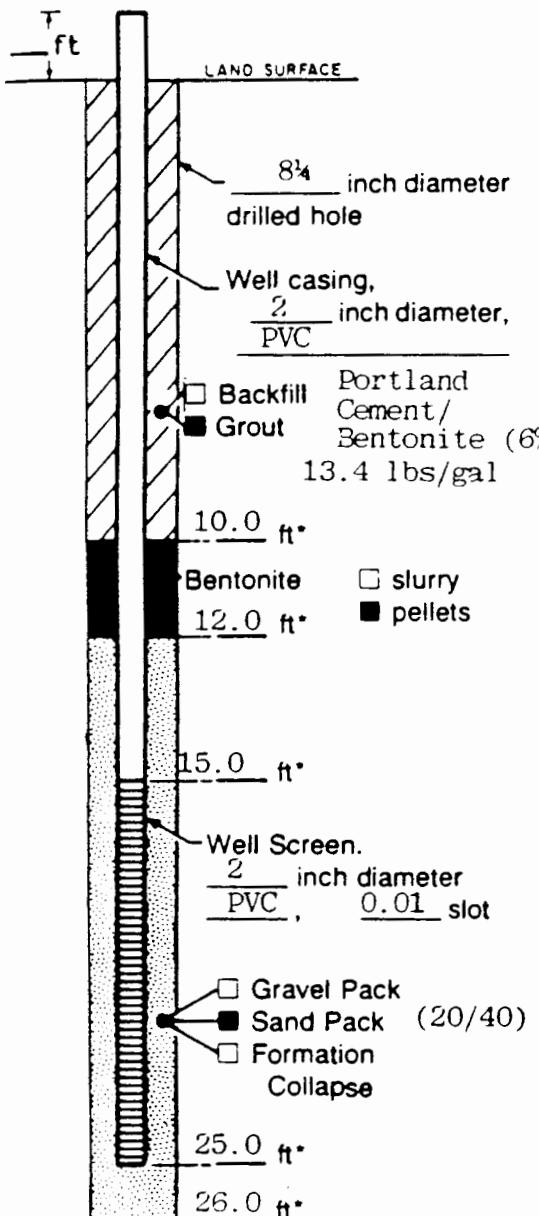


Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-7
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-25-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
Hand Bailed 9-13-90			
Airlift 9-13-90			
Fluid Loss During Drilling	None gallons		
Water Removed During Development	84 gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	21 minutes hours		
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks NA			

WELL CONSTRUCTION LOG

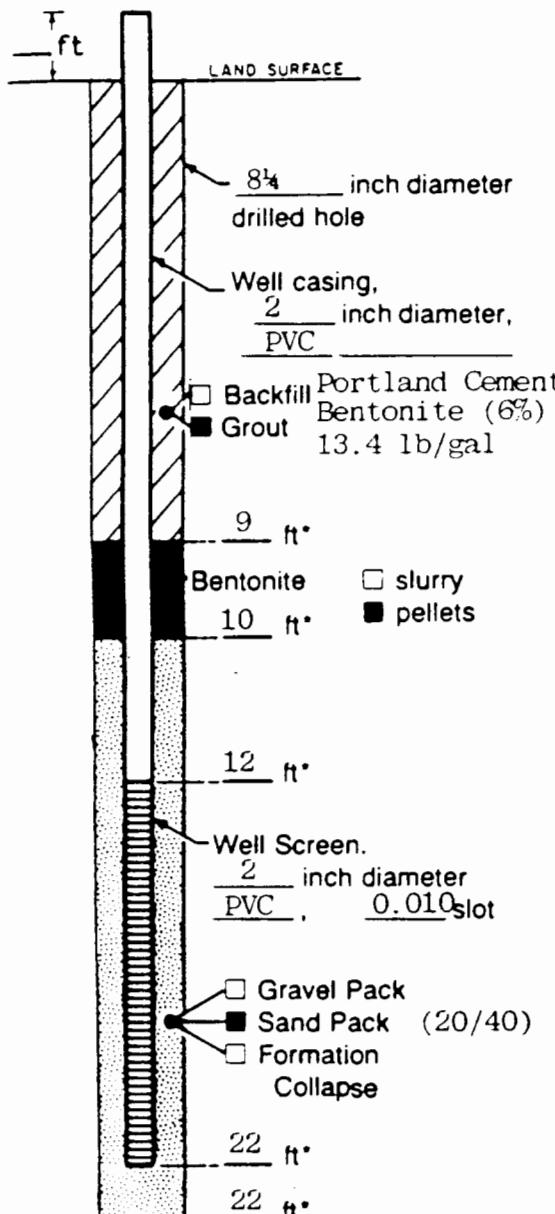


Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-8
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-26-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s) 9-13-90 airlift			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	52 gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	26 minutes hours		
Yield	NA	gpm	Date 9-13-90
Specific Capacity	NA gpm/ft		
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

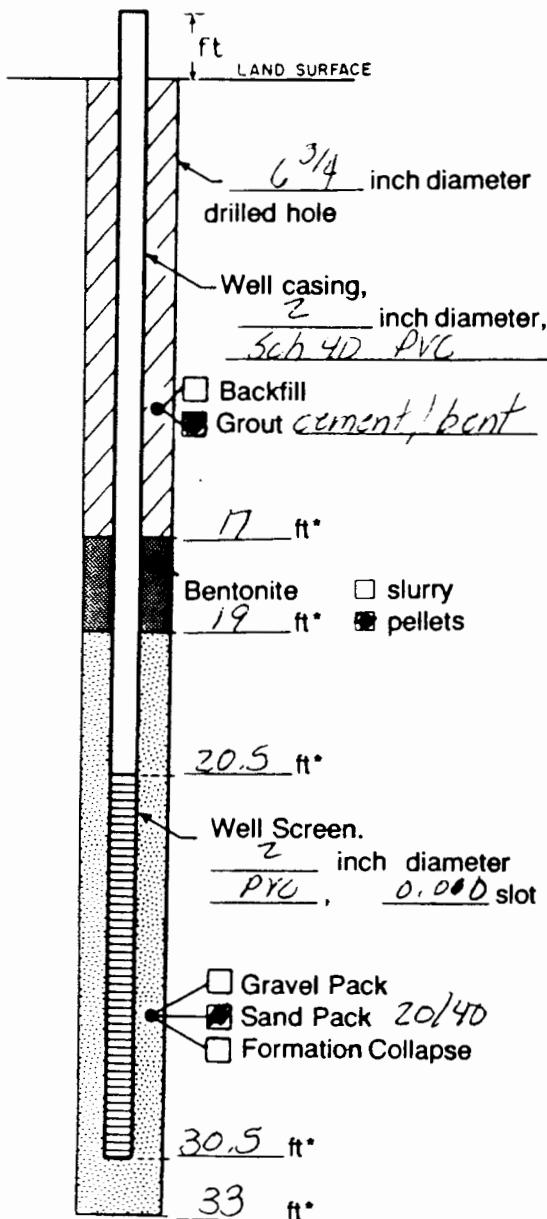
*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-9
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-27-90		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	None		
Development Techniques(s) and Date(s)			
Airlift 9-13-90			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	52.5	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by _____ Kipper W. Montgomery

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LA 490.01 Well MW-10
 Town/City Port Neches
 County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11/6/91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

Fluid Loss During Drilling none gallons

Water Removed During Development N/A gallons

Static Depth to Water N/A feet below M.P.

Pumping Depth to Water N/A feet below M.P.

Pumping Duration N/A hours

Yield N/A gpm

Date _____

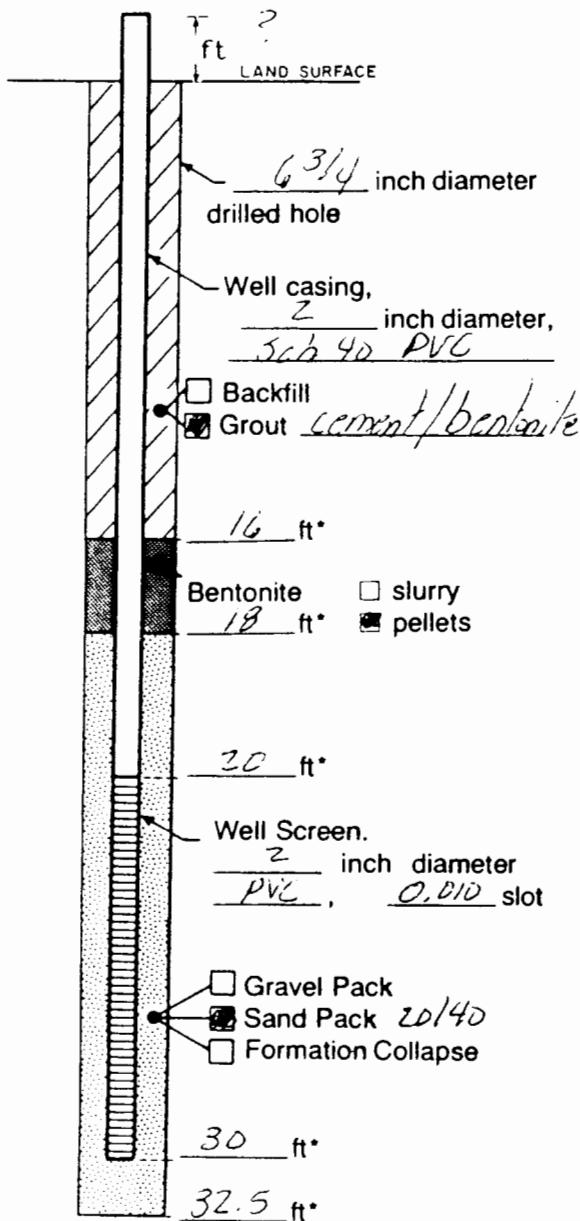
Specific Capacity N/A gpm/ft

Well Purpose _____

Remarks _____

Prepared by T. Harrel

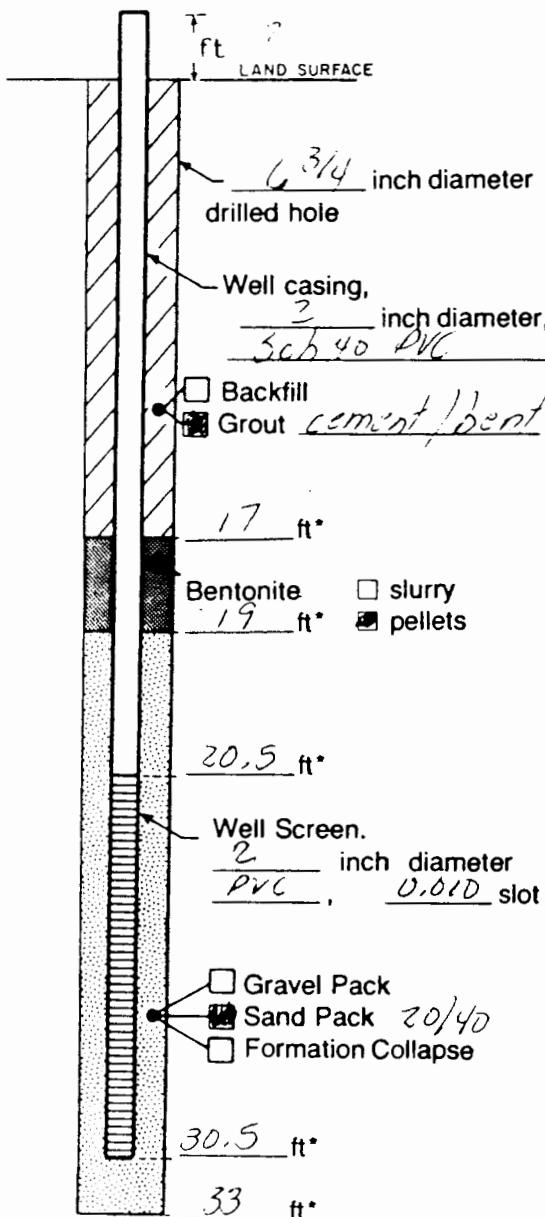
WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Project	LA 490.01	Well	MW-11
Town/City	Port Neches		
County	Jefferson		
State	TX		
Permit No.			
Land-Surface Elevation			
and Datum	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated	
Installation Date(s)	11/6/91		
Drilling Method	Follow stem		
Drilling Contractor	Layne		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
<hr/> <hr/>			
Fluid Loss During Drilling	None	gallon:	
Water Removed During Development	NA	gallon:	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	
Specific Capacity	NA	gpm/ft	
Well Purpose			
<hr/> <hr/>			
Remarks			
<hr/> <hr/>			
Prepared by	T. Harrel		

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LN490.01 Well MN-12

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11/17/91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

Fluid Loss During Drilling none gallons

Water Removed During Development N/A gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration NA hours

Yield N/A gpm

Date _____

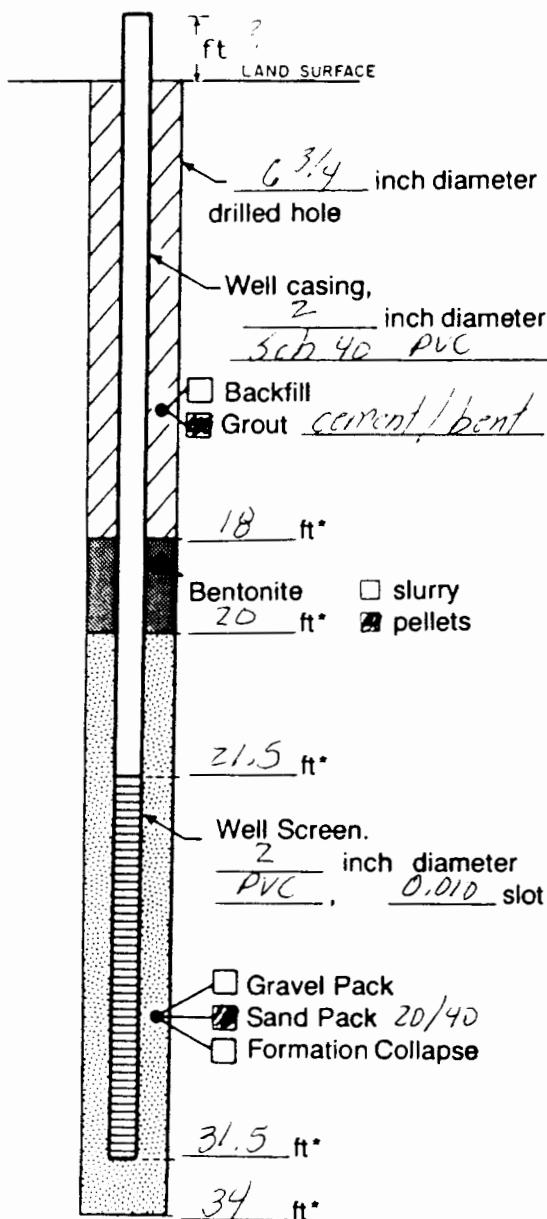
Specific Capacity NA gpm/ft

Well Purpose _____

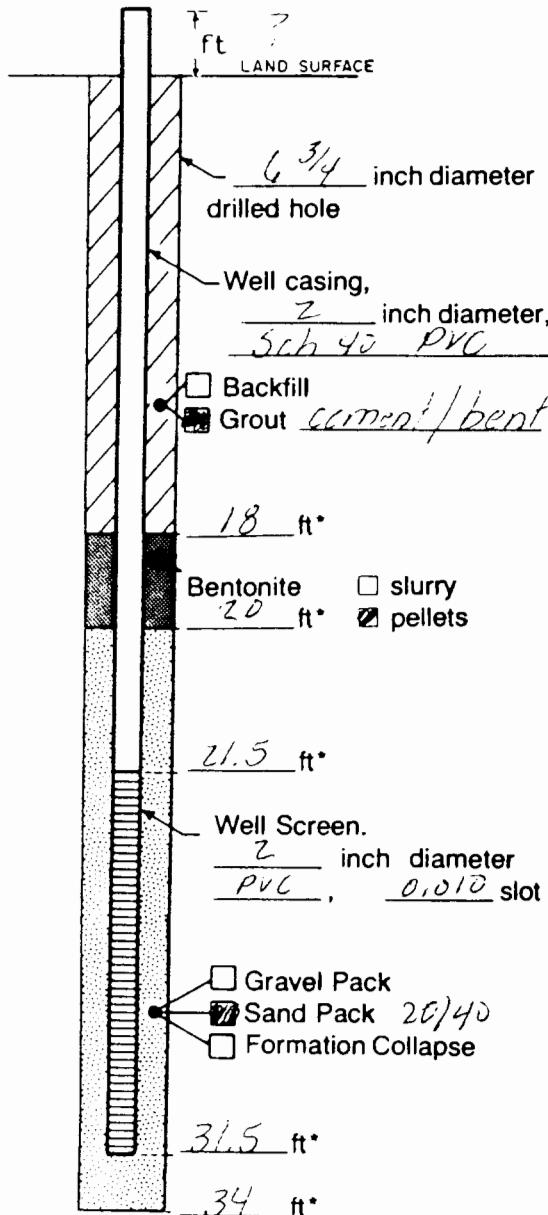
Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG (UNCONSOLIDATED)



WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

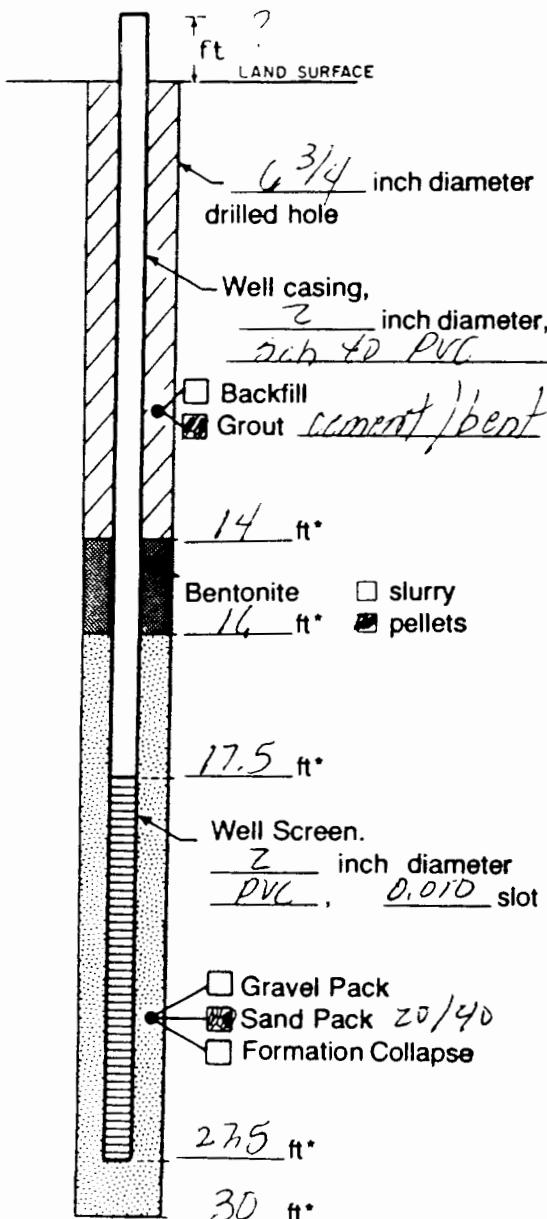
*Depth Below Land Surface

Project	LA 490.01	Well	MW-14
Town/City	Port Neches		
County	Jefferson		
State	TX		
Permit No.			
Land-Surface Elevation			
and Datum	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated	
Installation Date(s)	11/18/91		
Drilling Method	Hollow stem		
Drilling Contractor	Layne		
Drilling Fluid	none		
Development Technique(s) and Date(s)			
<hr/> <hr/> <hr/>			
Fluid Loss During Drilling	none gallons		
Water Removed During Development	NA gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA gpm	Date _____	
Specific Capacity	NA gpm/ft		
Well Purpose			
<hr/> <hr/> <hr/>			
Remarks			
<hr/> <hr/> <hr/>			

Prepared by T. Harrel



WELL CONSTRUCTION LOG (UNCONSOLIDATED)



**Measuring Point is
Top of Well Casing
Unless Otherwise Noted.**

*Depth Below Land Surface

Project LA 490.01 Well MW-15

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet Surveyed

Estimated

Installation Date(s) 11-9-91

Drilling Method Hollow stem

Drilling Contractor *Rayne*

Development Technique(s) and Date(s)

Fluid Loss During Drilling none gallon

Water Removed During Development NA gallon

Static Depth to Water NA feet below M.F.

Pumping Depth to Water NA feet below M.F.

Pumping Duration N/A hours

Yield NA gpm Date _____

Specific Capacity NA gpm/ft

Well Purpose _____

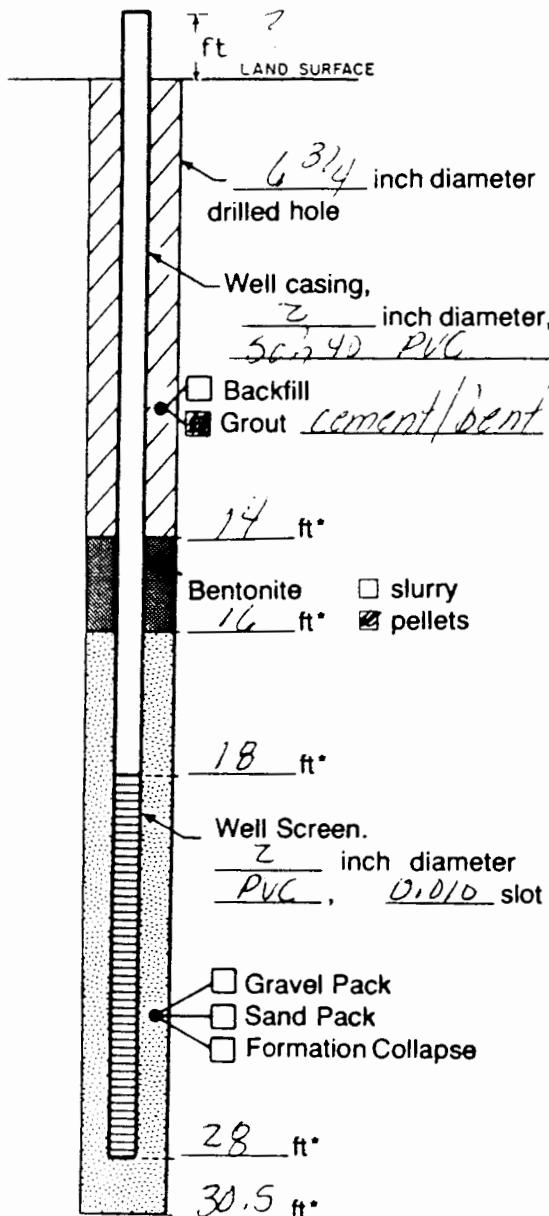
Digitized by srujanika@gmail.com

Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
 Top of Well Casing
 Unless Otherwise Noted.

* Depth Below Land Surface

Project LA 440.01 Well mw-26

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-10-91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

Fluid Loss During Drilling none gallon

Water Removed During Development NA gallon

Static Depth to Water NA feet below M.F.

Pumping Depth to Water NA feet below M.F.

Pumping Duration NA hours

Yield NA gpm Date _____

Specific Capacity NA gpm/ft

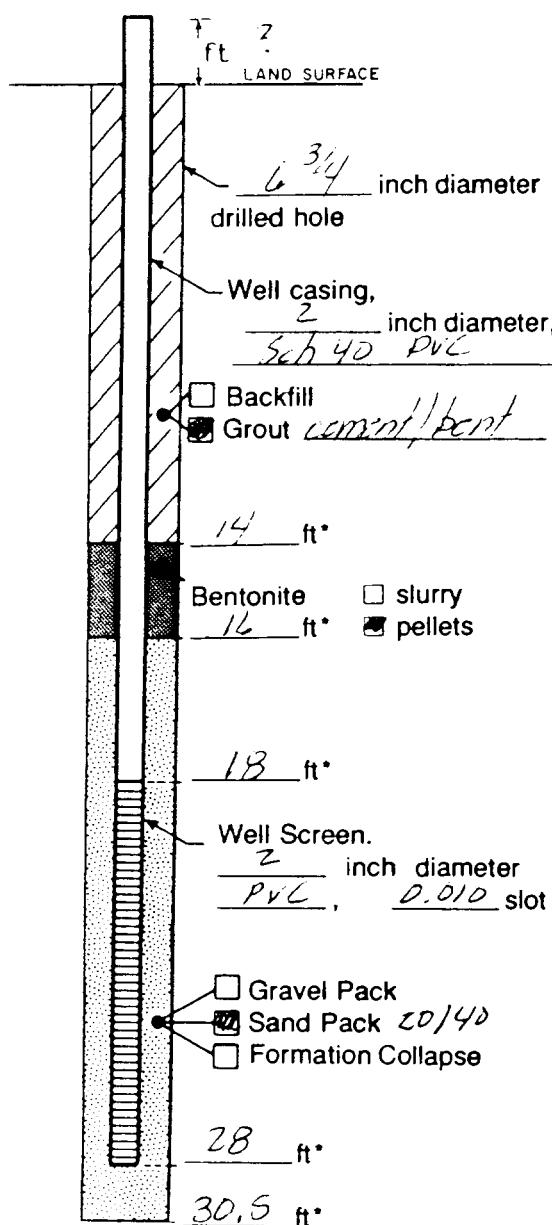
Well Purpose _____

Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
 Top of Well Casing
 Unless Otherwise Noted.

*Depth Below Land Surface

Project LA 490.01 Well MW-17

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-11-91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid DOWC

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallon:

Water Removed During Development NA gallon:

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.F.

Pumping Duration NA hours

Yield NA gpm

Date _____

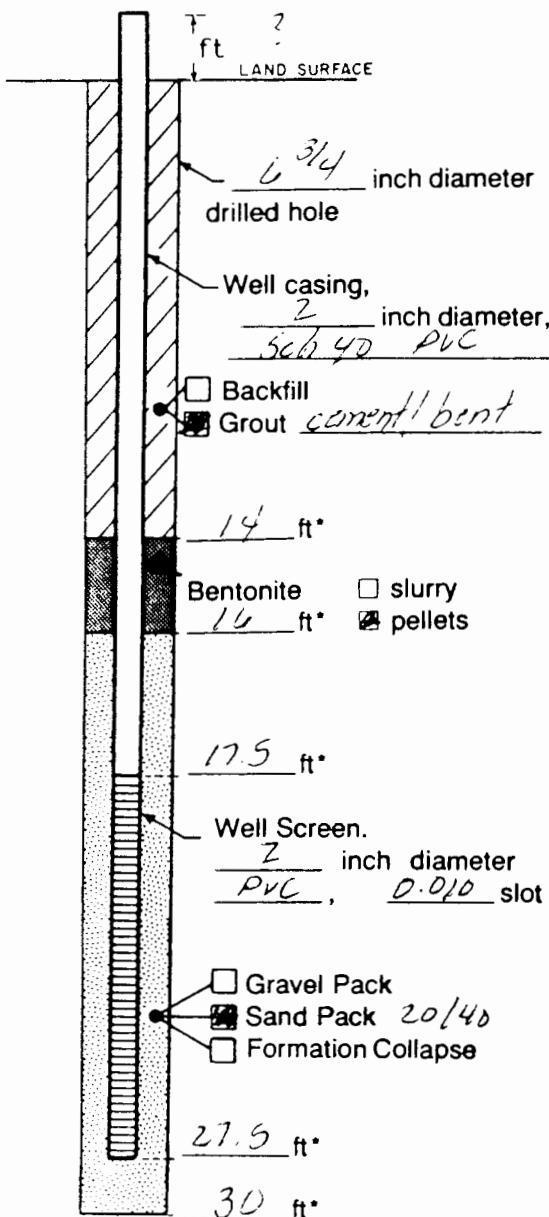
Specific Capacity NA gpm/ft

Well Purpose _____

Remarks _____



WELL CONSTRUCTION LOG (UNCONSOLIDATED)



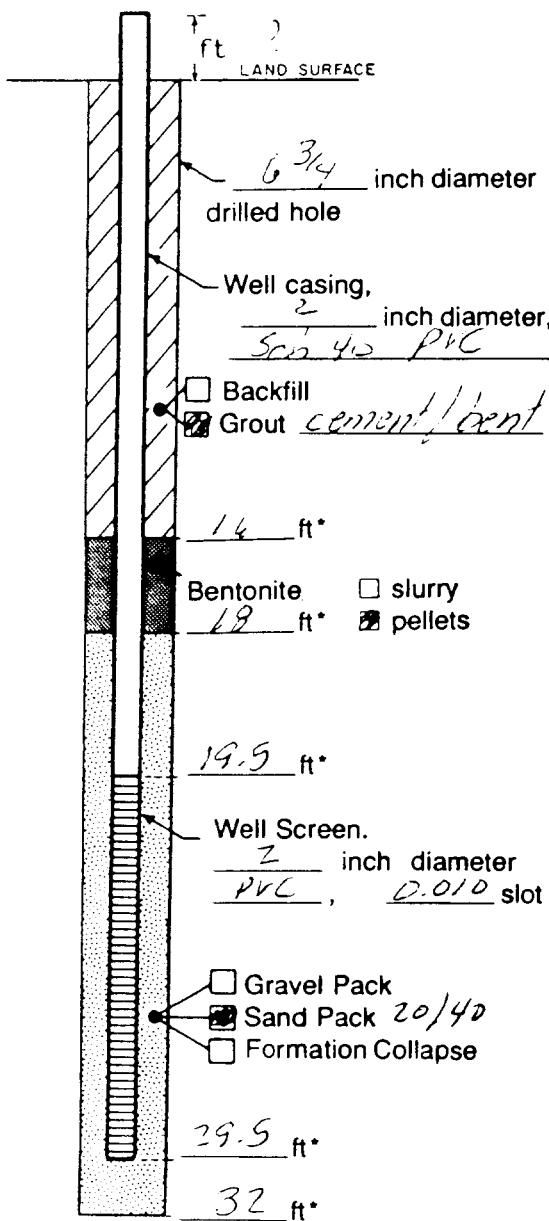
**Measuring Point is
Top of Well Casing
Unless Otherwise Noted.**

• Depth Below Land Surface

Project LH 490.01 Well MW-18
 Town/City Port Neches
 County Jefferson State TX
 Permit No. _____
 Land-Surface Elevation
 and Datum _____ feet Surveyed
 Estimated
 Installation Date(s) 11-11-91
 Drilling Method Hollow stem
 Drilling Contractor Layne
 Drilling Fluid none
 Development Technique(s) and Date(s)
NA
 Fluid Loss During Drilling none gallons
 Water Removed During Development NA gallons
 Static Depth to Water NA feet below M.P.
 Pumping Depth to Water NA feet below M.P.
 Pumping Duration NA hours
 Yield NA gpm Date _____
 Specific Capacity NA gpm/ft
 Well Purpose _____
 Remarks _____
 Prepared by J Harrel

Prepared by T Harrel

WELL CONSTRUCTION LOG (UNCONSOLIDATED)



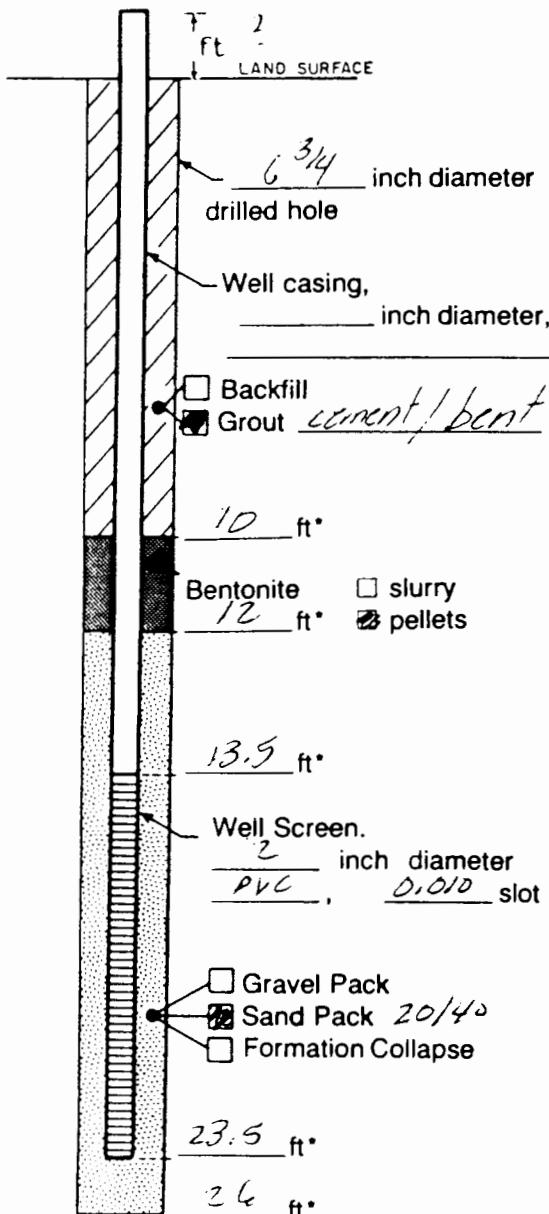
Measuring Point is
 Top of Well Casing
 Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA 490.01	Well	MW-19
Town/City	Port Neches		
County	Jefferson		
State	TX		
Permit No.			
Land-Surface Elevation and Datum	feet		<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	11-12-91		
Drilling Method	Hollow stem		
Drilling Contractor	Layne		
Drilling Fluid	none		
Development Technique(s) and Date(s) NA			
Fluid Loss During Drilling	none		gallons
Water Removed During Development	NA		gallons
Static Depth to Water	NA		feet below M.P.
Pumping Depth to Water	NA		feet below M.F.
Pumping Duration	NA		hours
Yield	NA		gpm
Specific Capacity	NA		gpm/ft
Well Purpose			
Remarks			

Prepared by T. Harrel

WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Measuring Point is
 Top of Well Casing
 Unless Otherwise Noted.

*Depth Below Land Surface

Project LIA 44D-01 Well MW-20

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-12-81

Drilling Method Hollow stem

Drilling Contractor Logue

Drilling Fluid none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallons

Water Removed During Development NA gallons

Static Depth to Water NA feet below M.F.

Pumping Depth to Water NA feet below M.F.

Pumping Duration NA hours

Yield NA gpm

Date _____

Specific Capacity NA gpm/ft

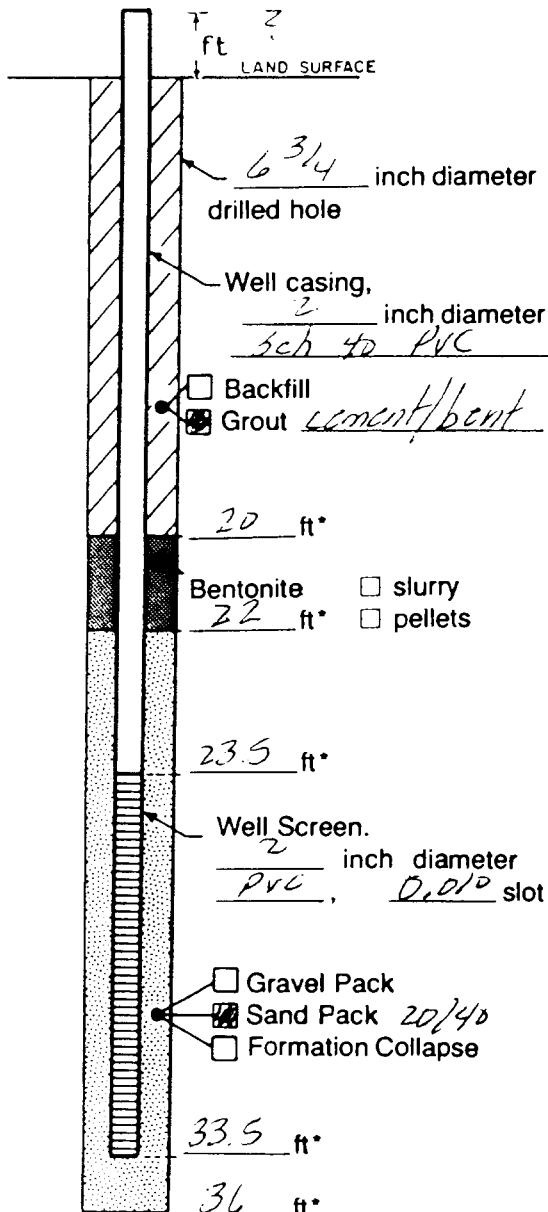
Well Purpose _____

Remarks _____

Prepared by Z. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LA 440.01 Well MW-21

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-13-81

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallon:

Water Removed During Development NA gallon:

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.F.

Pumping Duration NA hours

Yield NA gpm

Date _____

Specific Capacity NA gpm/ft

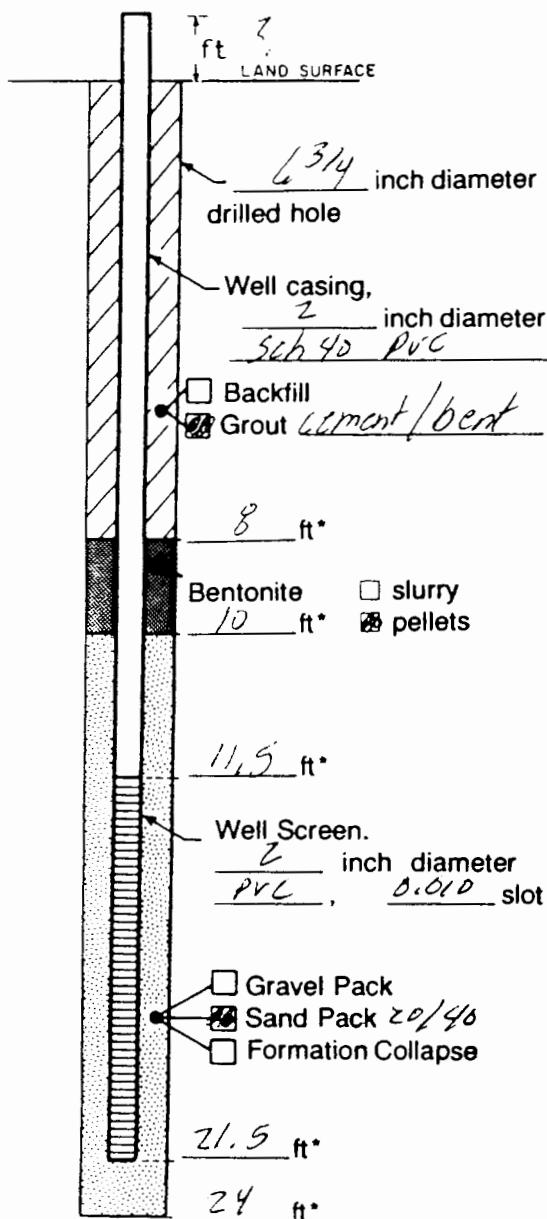
Well Purpose _____

Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LH 440.01 Well MIV-24

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-14-91

Drilling Method 1121100 stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallon

Water Removed During Development NA gallon

Static Depth to Water _____ feet below M.F.

Pumping Depth to Water _____ feet below M.F.

Pumping Duration NA hours

Yield NA gpm

Date _____

Specific Capacity NA gpm/ft

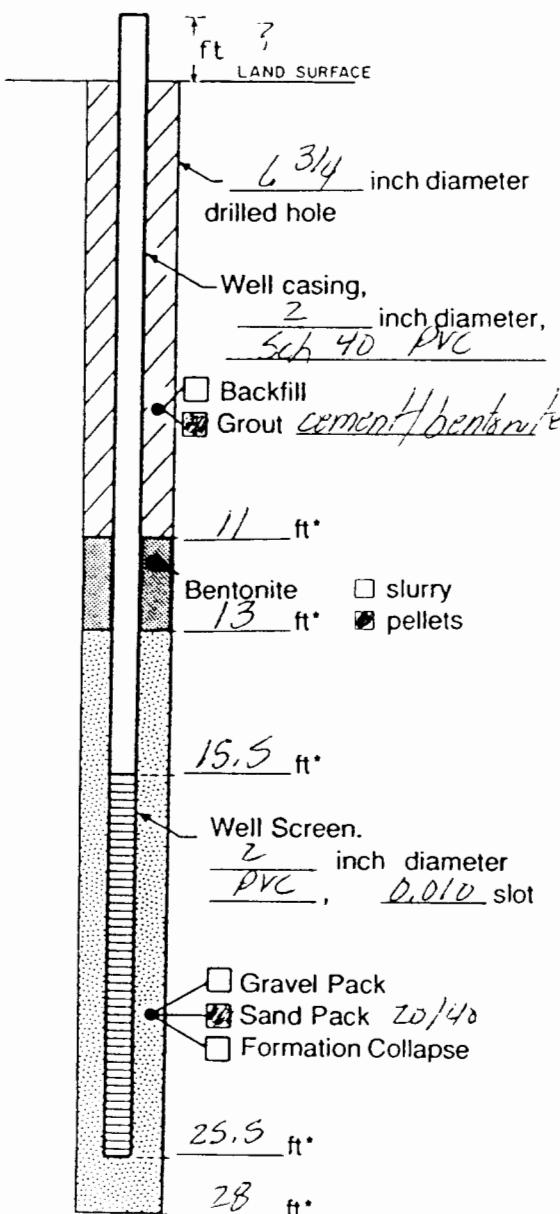
Well Purpose _____

Remarks _____

Prepared by T. Harrel



WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted

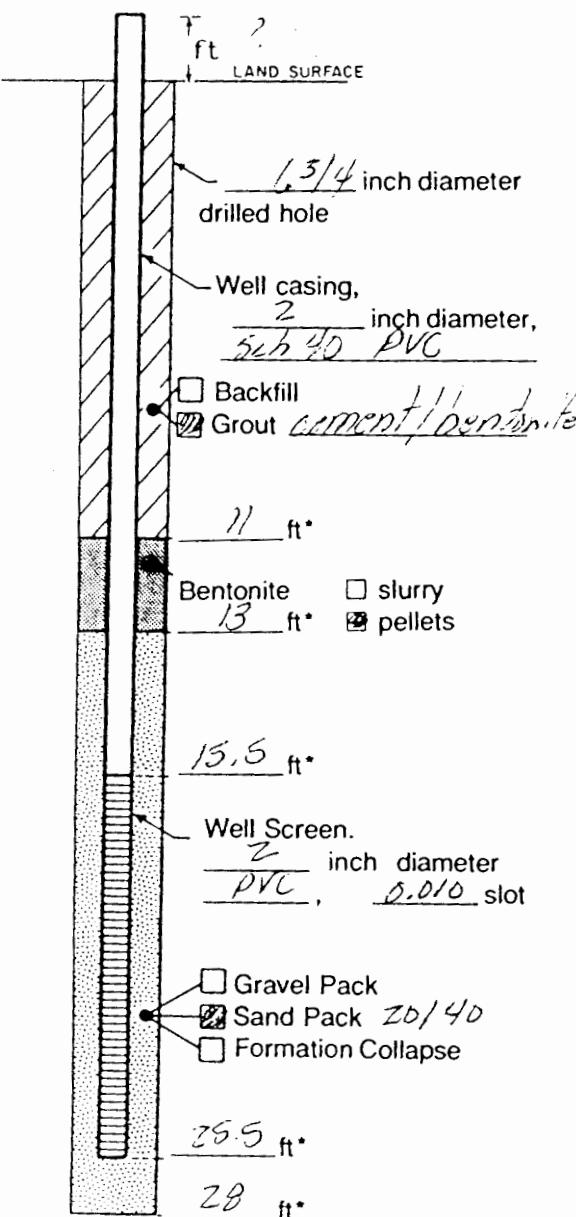
*Depth Below Land Surface

Project Texas / LA 490.01 Well MW-25
 Town/City Port Neches
 County Jefferson State TX
 Permit No. _____
 Land-Surface Elevation
 and Datum _____ feet Surveyed
 Estimated
 Installation Date(s) 11-18-81
 Drilling Method Hollow stem
 Drilling Contractor Layne
 Drilling Fluid None
 Development Technique(s) and Date(s)
NA
 Fluid Loss During Drilling None gallons
 Water Removed During Development NA gallons
 Static Depth to Water NA feet below M.P.
 Pumping Depth to Water NA feet below M.P.
 Pumping Duration NA hours
 Yield NA gpm Date _____
 Specific Capacity NA gpm/ft
 Well Purpose _____
 Remarks _____
 Prepared by T. Harrel

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project Texco / LA 490.01 Well MW-26

Town/City Jefferson Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-18-91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallon

Water Removed During Development NA gallon

Static Depth to Water NA feet below M.L.

Pumping Depth to Water NA feet below M.L.

Pumping Duration NA hours

Yield NA gpm Date _____

Specific Capacity NA gpm/ft

Well Purpose _____

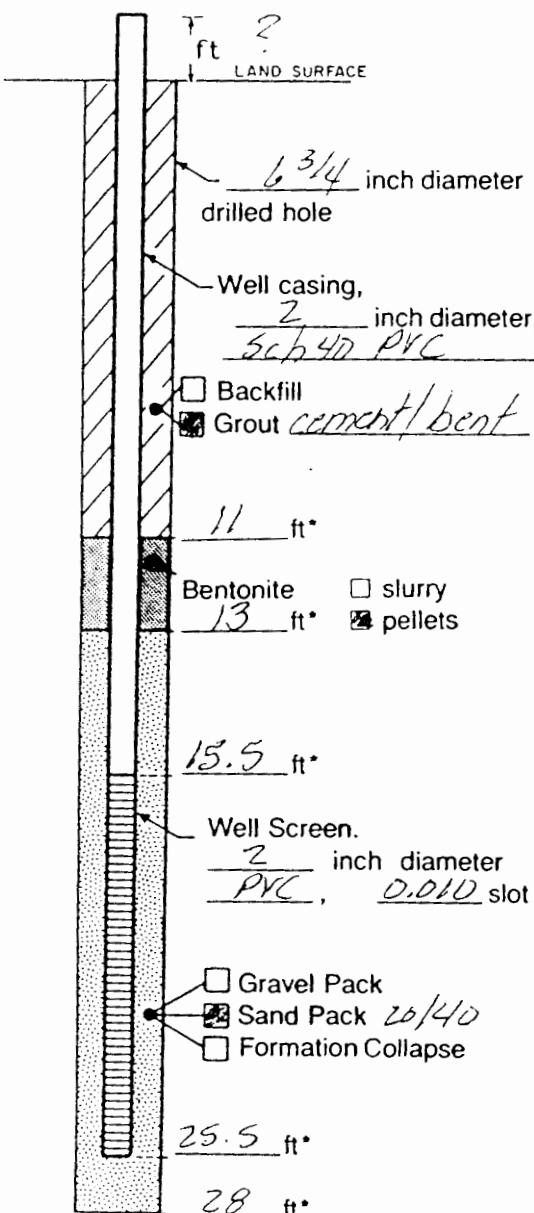
Remarks _____

Prepared by

T. Harrel



WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project Texaco 12A 490.01 Well MW-27
Town/City Port Neches
County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 11-19-91

Drilling Method Hollow stem

Drilling Contractor Layne

Drilling Fluid None

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling none gallons

Water Removed During Development NA

Static Depth to Water NA feet below M.F.

Pumping Depth to Water NH

Pumping Duration NA hours

Yield NF qpm

Specific Capacity _____

Well Purpose

Remarks.

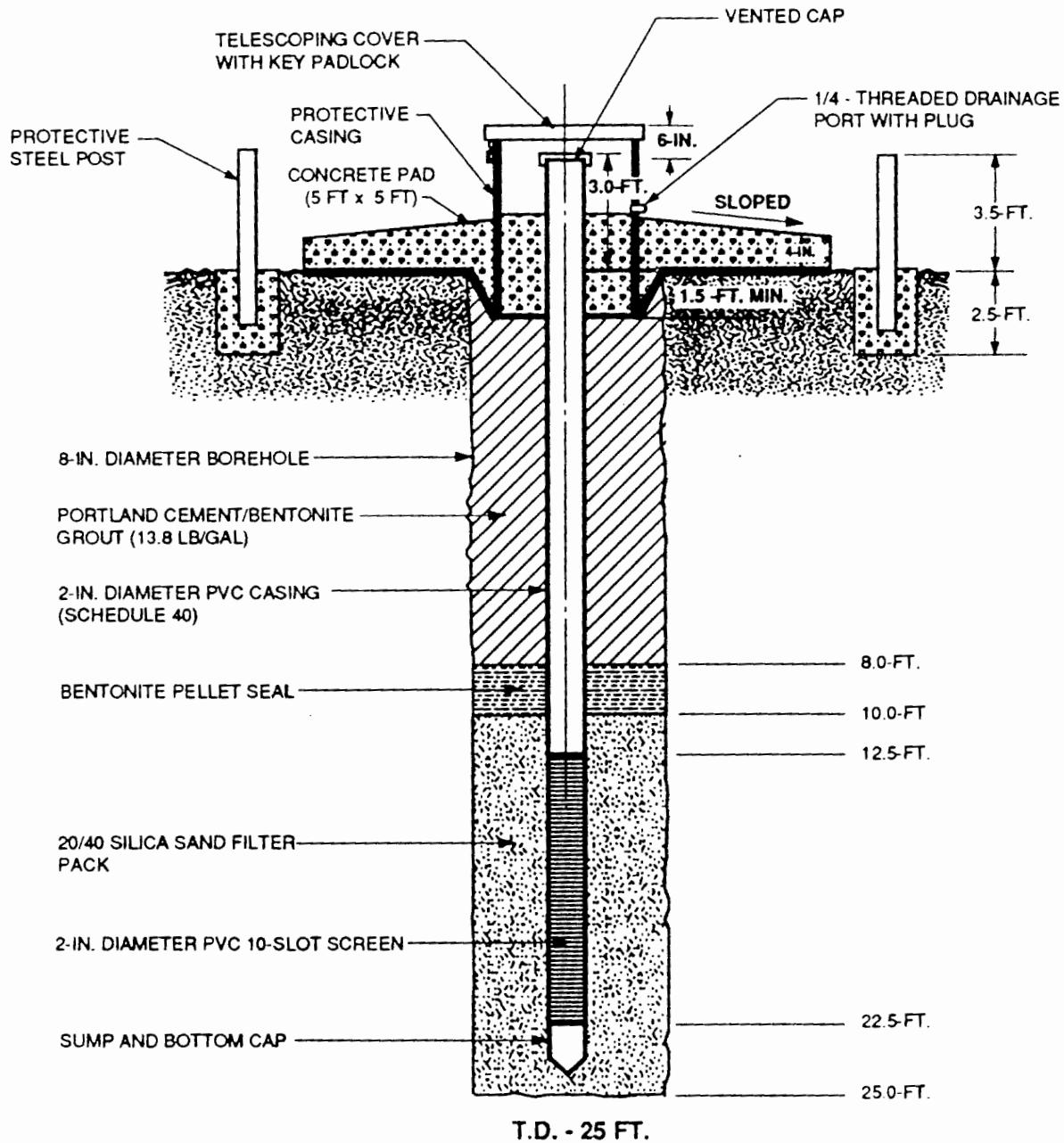
Prepared by

T. Harrel



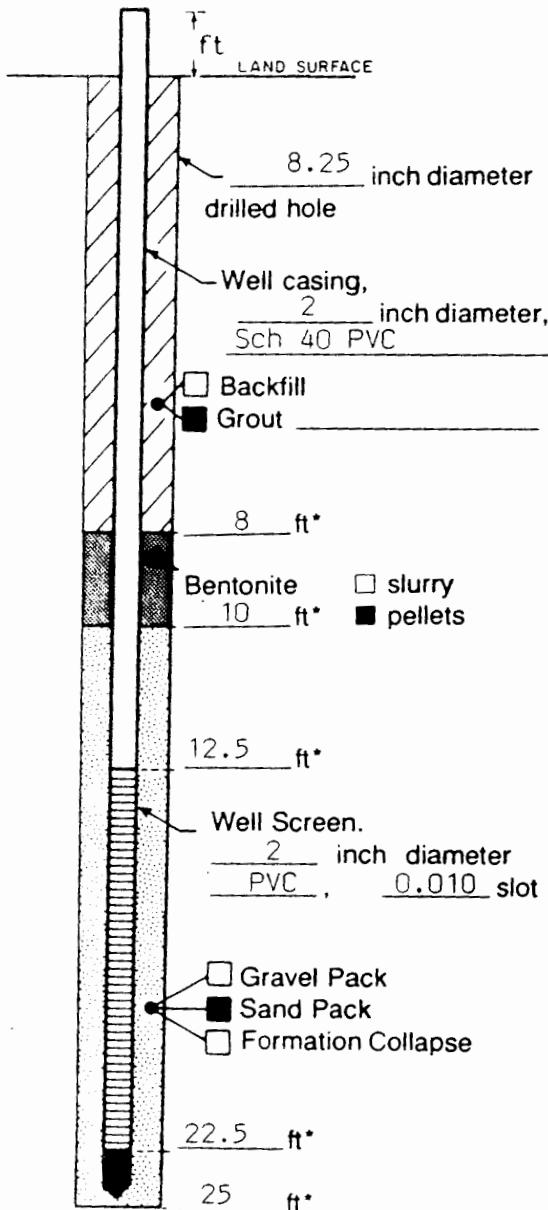
MONITOR-WELL CONSTRUCTION
DIAGRAM
MW-28

PROJECT:
TEXACO CHEMICAL COMPANY
Port Neches, Texas



WELL CONSTRUCTION LOG

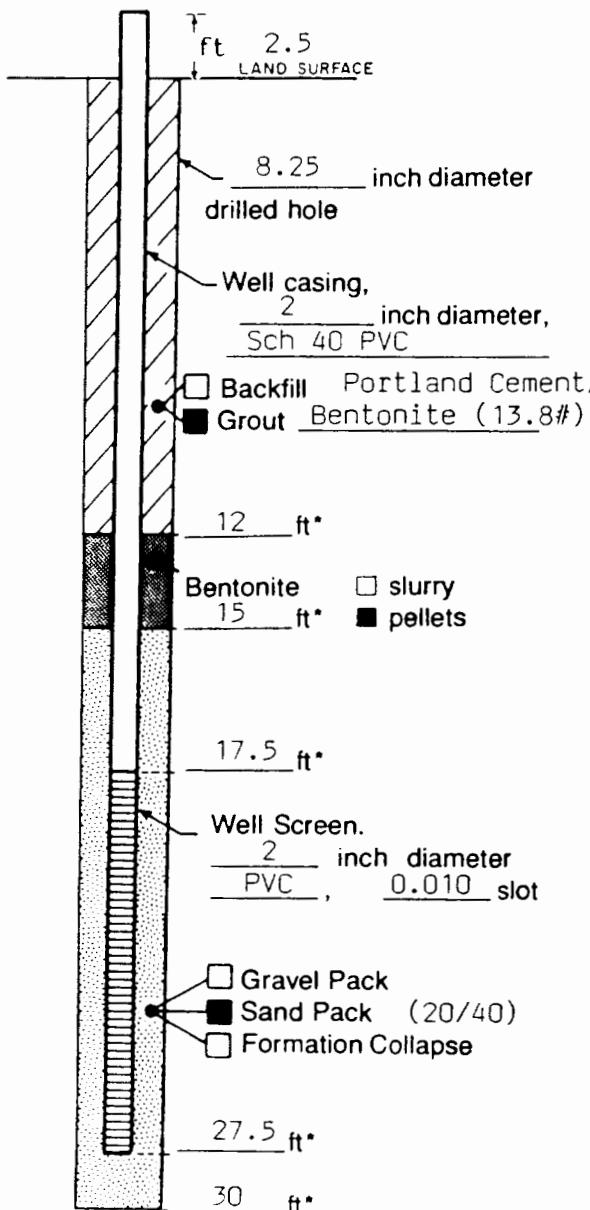
(UNCONSOLIDATED)



Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

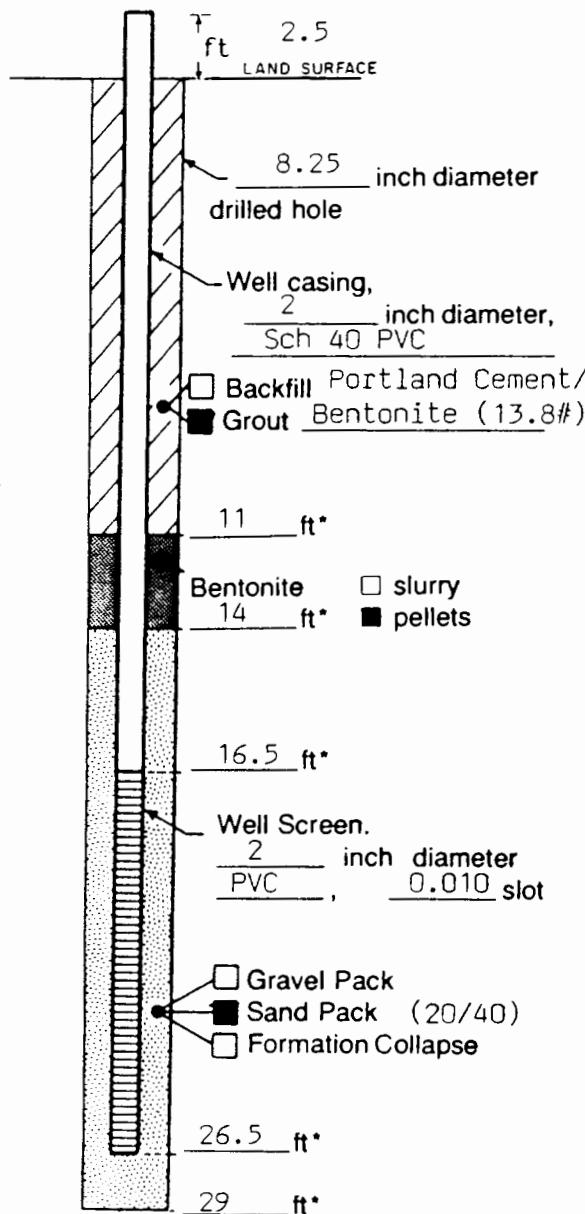
*Depth Below Land Surface

Project	Texaco Chemical - LA490.01	Well	MW-29
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	April 27, 1992		
Drilling Method	Hollow Stem		
Drilling Contractor	Layne		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
Fluid Loss During Drilling None gallons			
Water Removed During Development gallons			
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Monitoring Well		
Remarks			

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



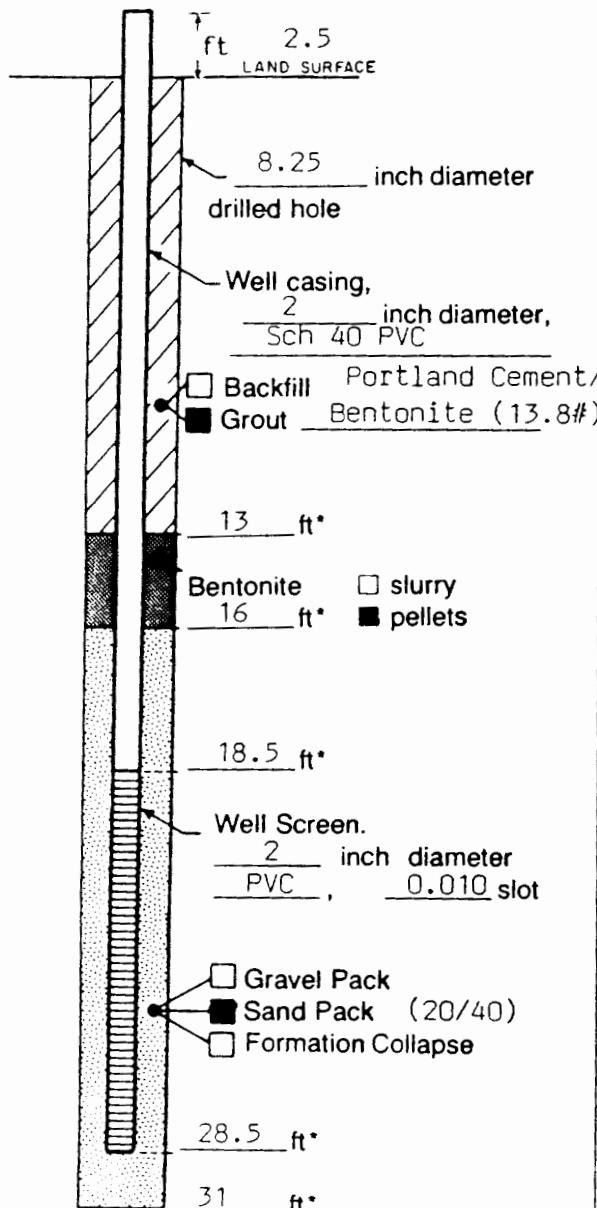
*Depth Below Land Surface

Project	Texaco Chemical - LA490.01 Well	MW-30
Town/City	Port Neches	
County	Jefferson	State TX
Permit No.	NA	
Land-Surface Elevation and Datum	NA	feet
	<input type="checkbox"/> Surveyed	
	<input type="checkbox"/> Estimated	
Installation Date(s)	April 28, 1992	
Drilling Method	Hollow Stem	
Drilling Contractor	Layne	
Drilling Fluid	None	
Development Technique(s) and Date(s)		
Fluid Loss During Drilling	None gallons	
Water Removed During Development	gallons	
Static Depth to Water	NA feet below M.P.	
Pumping Depth to Water	NA feet below M.P.	
Pumping Duration	NA hours	
Yield	NA gpm	Date NA
Specific Capacity	NA gpm/ft	
Well Purpose	Monitoring Well	
Remarks		

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



*Depth Below Land Surface

Project Texaco Chemical LA490.01 Well MW-31

Town/City Port Neches

County Jefferson State TX

Permit No. NA

Land-Surface Elevation

and Datum NA feet Surveyed Estimated

Installation Date(s) April 28, 1992

Drilling Method Hollow Stem

Drilling Contractor Layne

Drilling Fluid None

Development Technique(s) and Date(s)

Fluid Loss During Drilling None gallons

Water Removed During Development gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration NA hours

Yield NA gpm Date NA

Specific Capacity NA gpm/ft

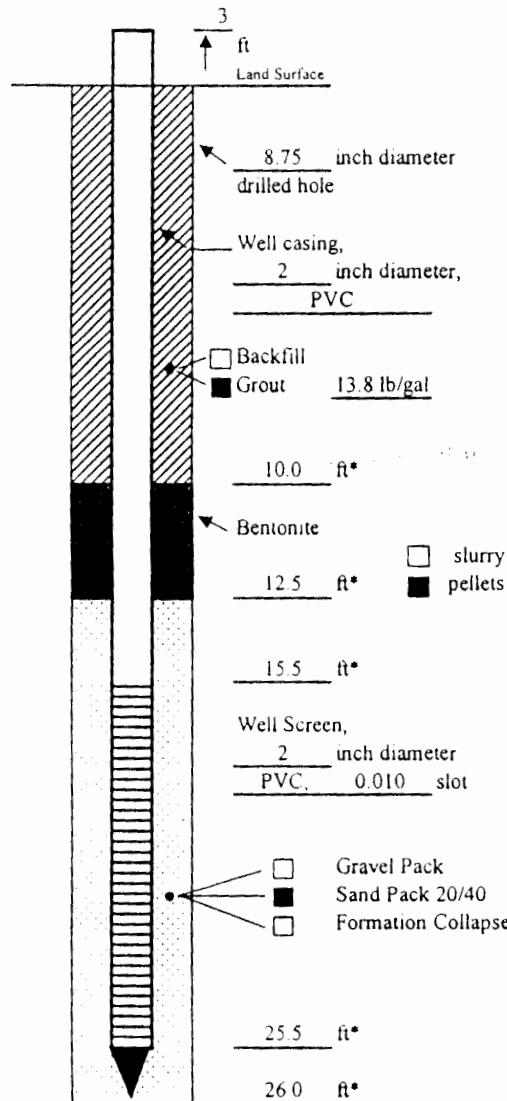
Well Purpose Monitoring Well

Remarks

Prepared by T. Harrel



ARCADIS G&M



Measuring Point is Top of Well Casing Unless Otherwise Noted.
* Depth Below Land Surface

Project Huntsman/LA002196.0002 00001 Well MW-32
 Town/City Port Neches
 County/Parish Jefferson State Texas
 Permit Number NA
 Land-Surface Elevation and Datum 6.56 feet
 TOC Elevation 9.66 Surveyed
 Estimated

Installation Date(s) 3/5/2002
 Drilling Method hollow stem
 Drilling Contractor CCI
 Drilling Fluid None

Development Technique(s) and Date(s)
 2-inch rediflo pump 3/20/02

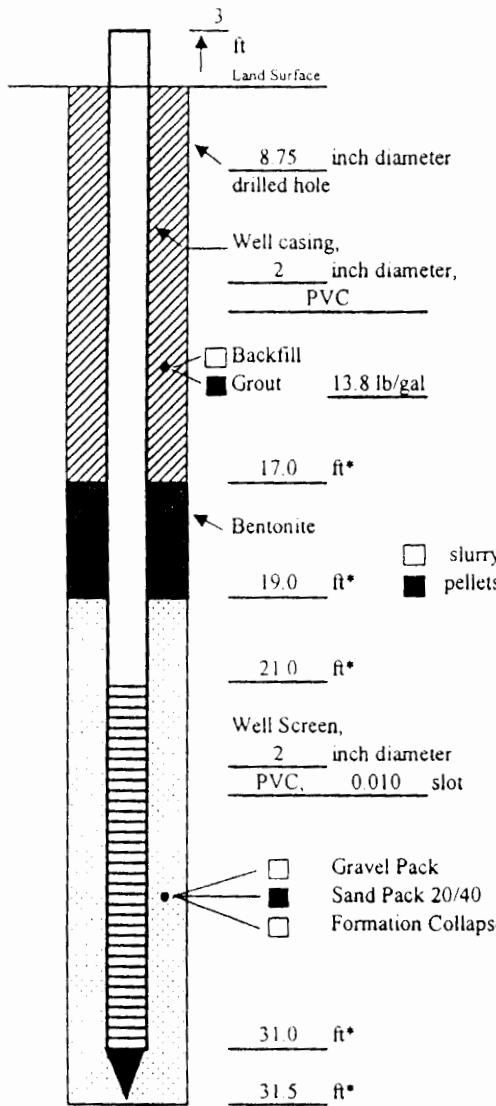
Fluid Loss During Drilling NA gallons
 Water Removed During Development 110 gallons
 Static Depth to Water 4.65 feet below M.P.
 Pumping Depth to Water NA feet below M.P.
 Pumping Duration NA hours
 Yield NA gpm Date NA
 Specific Capacity NA gpm/ft
 Well Purpose Monitor Well

Remarks

Prepared by George Cook



ARCADIS G&M



Measuring Point is Top of Well Casing Unless Otherwise Noted.
• Depth Below Land Surface

Project	Huntsman/LA002196 0002 00001	Well	MW-33
---------	------------------------------	------	-------

Town/City	Port Neches	State	Texas
-----------	-------------	-------	-------

County/Parish	Jefferson		
---------------	-----------	--	--

Permit Number	NA		
---------------	----	--	--

Land-Surface Elevation			
------------------------	--	--	--

and Datum	13.06	feet	
-----------	-------	------	--

TOC Elevation	15.99		
---------------	-------	--	--

Surveyed
 Estimated

Installation Date(s)	3/6/2002		
----------------------	----------	--	--

Drilling Method	hollow stem		
-----------------	-------------	--	--

Drilling Contractor	CCI		
---------------------	-----	--	--

Drilling Fluid	None		
----------------	------	--	--

Development Technique(s) and Date(s)

2-inch rediflo pump 3/19/02		
-----------------------------	--	--

Fluid Loss During Drilling	NA	gallons
----------------------------	----	---------

Water Removed During Development	75	gallons
----------------------------------	----	---------

Static Depth to Water	9.0	feet below M.P.
-----------------------	-----	-----------------

Pumping Depth to Water	NA	feet below M.P.
------------------------	----	-----------------

Pumping Duration	NA	hours
------------------	----	-------

Yield	NA	gpm
-------	----	-----

Specific Capacity	NA	Date NA
-------------------	----	---------

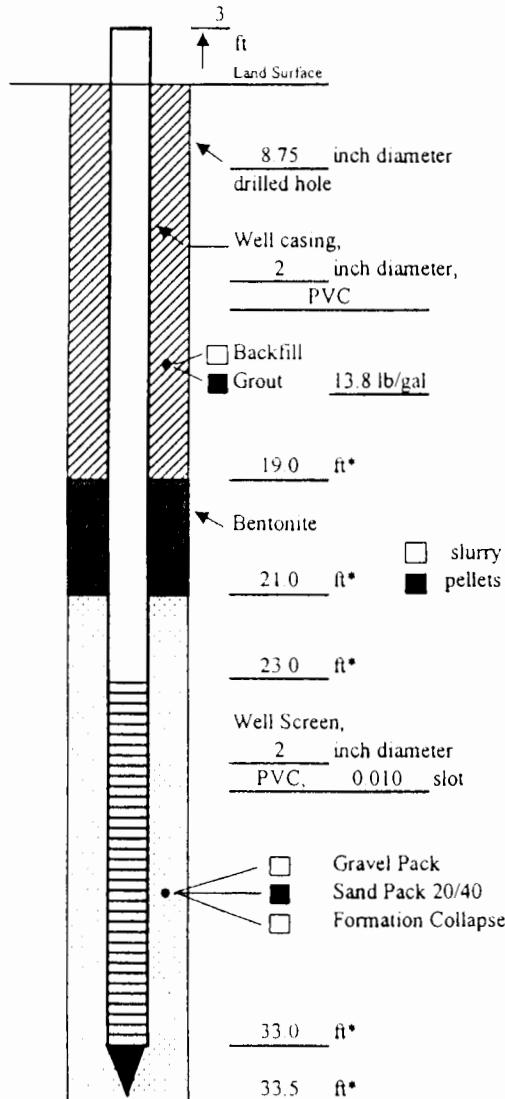
Well Purpose	Monitor Well	gpm/ft
--------------	--------------	--------

Remarks	
---------	--

Prepared by George Cook



ARCADIS G&M



Measuring Point is Top of Well Casing Unless Otherwise Noted.

* Depth Below Land Surface

Project Huntsman/LA002196 0002.00001 Well MW-34
 Town/City Port Neches
 County/Parish Jefferson State Texas
 Permit Number NA
 Land-Surface Elevation and Datum 13.68 feet
 TOC Elevation 16.01

Surveyed
 Estimated

Installation Date(s) 3/11/2002
 Drilling Method hollow stem
 Drilling Contractor CCI
 Drilling Fluid None

Development Technique(s) and Date(s)
2-inch rediflo pump 3/20/02

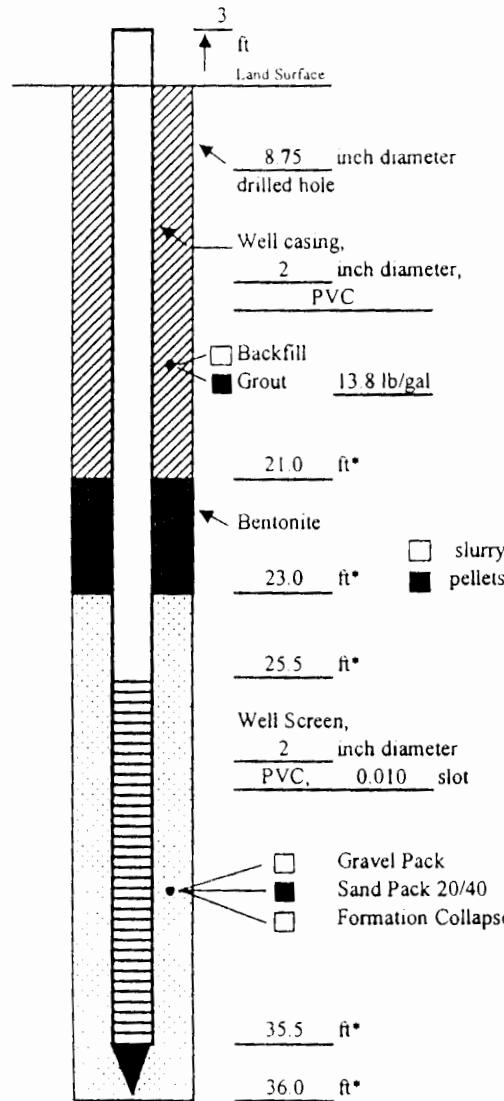
Fluid Loss During Drilling NA gallons
 Water Removed During Development 90 gallons
 Static Depth to Water 710 feet below M.P.
 Pumping Depth to Water NA feet below M.P.
 Pumping Duration NA hours
 Yield NA gpm Date NA
 Specific Capacity NA gpm/ft
 Well Purpose Monitor Well

Remarks

Prepared by George Cook



ARCADIS G&M

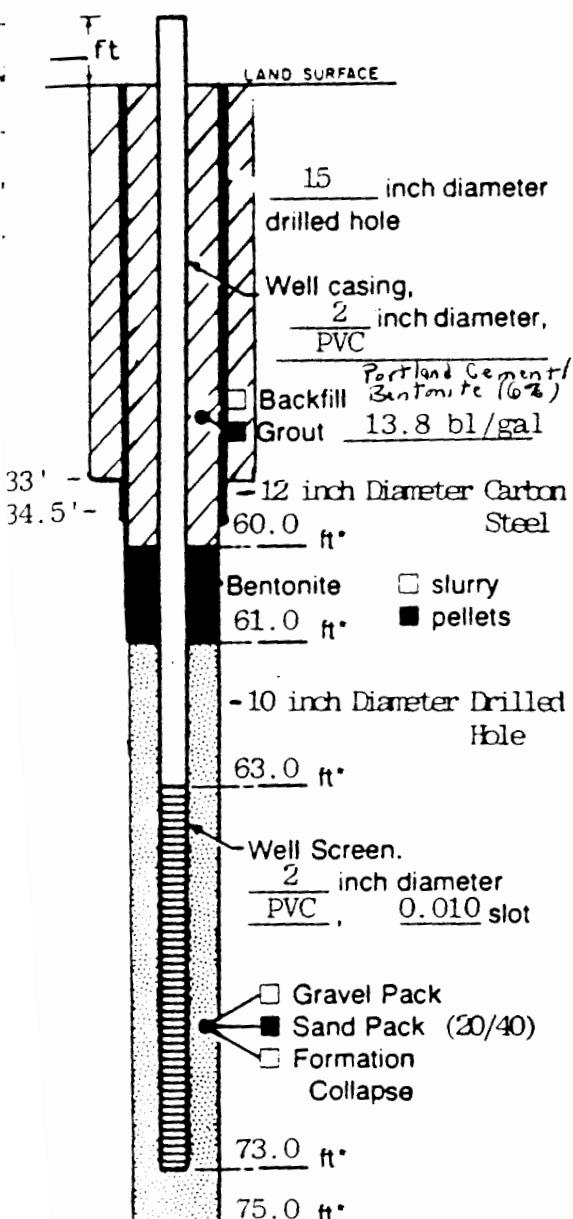


Measuring Point is Top of Well Casing Unless Otherwise Noted
 * Depth Below Land Surface

Project	Huntsman/LA002196 0002 00001	Well	MW-35
Town/City	Port Neches		
County/Parish	Jefferson	State Texas	
Permit Number	NA		
Land-Surface Elevation and Datum	NA	feet	<input checked="" type="checkbox"/> Surveyed
	NA		<input type="checkbox"/> Estimated
Installation Date(s)	3/12/2002		
Drilling Method	hollow stem		
Drilling Contractor	CCI		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
2-inch rediflo pump 3/20/02			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	90 gallons		
Static Depth to Water	7 10 feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA gpm	Date	NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Monitor Well		
Remarks			

Prepared by George Cook

WELL CONSTRUCTION LOG



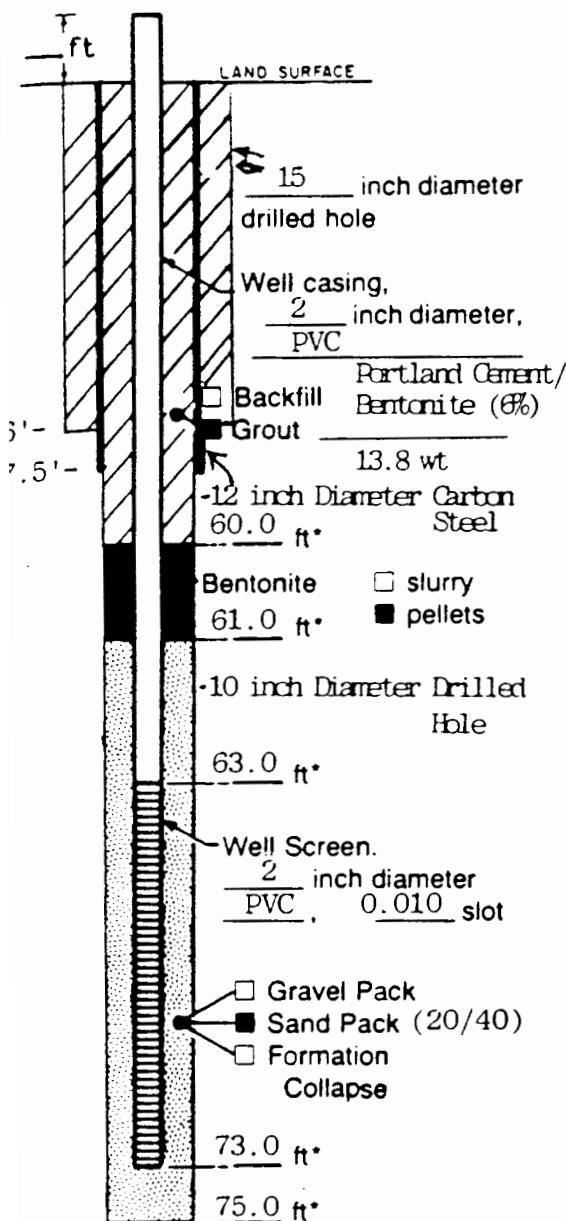
Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-1D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-27-90/8-28-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
Airlift 9-24-90			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	1000 gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	6.5 hours		
Yield	NA	gpm	Date 9-24-90
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by _____ Kipper W. Montgomery

WELL CONSTRUCTION LOG



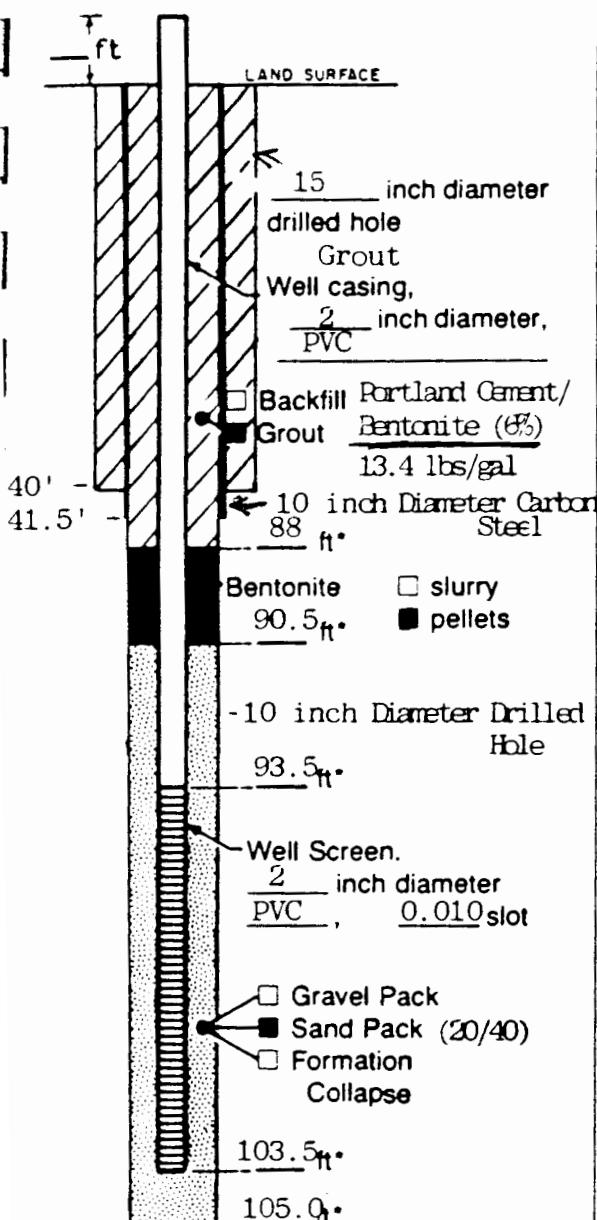
Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-2D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	9-22-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
Airlift 9-24-90			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	100 gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	1.4	gpm	Date 9-24-90
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

Prepared by Kipper W. Montgomery

WELL CONSTRUCTION LOG

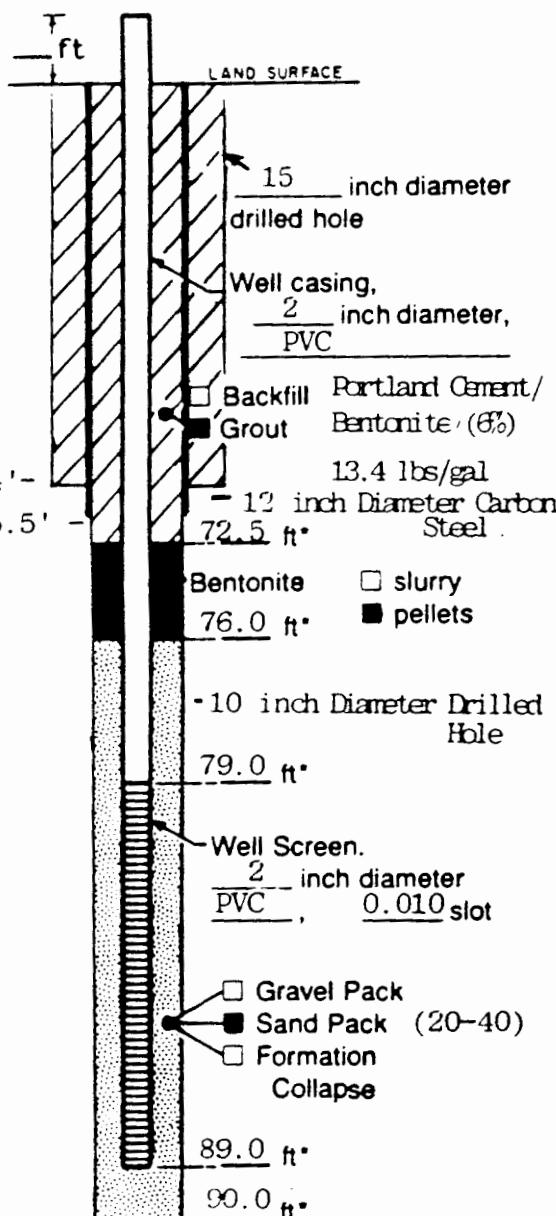


Measuring Point is Top of
Well Casing Unless Otherwise
Noted.

*Depth Below
Land Surface

Project	LA282.01 - Texaco	Well	MW-4D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	8-30 & 31-90/9-17 & 18-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental		
Drilling Fluid	Bentonite Mud		
Development Techniques(s) and Date(s) 9-25-90 Airlift			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	350	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	1.1	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

WELL CONSTRUCTION LOG

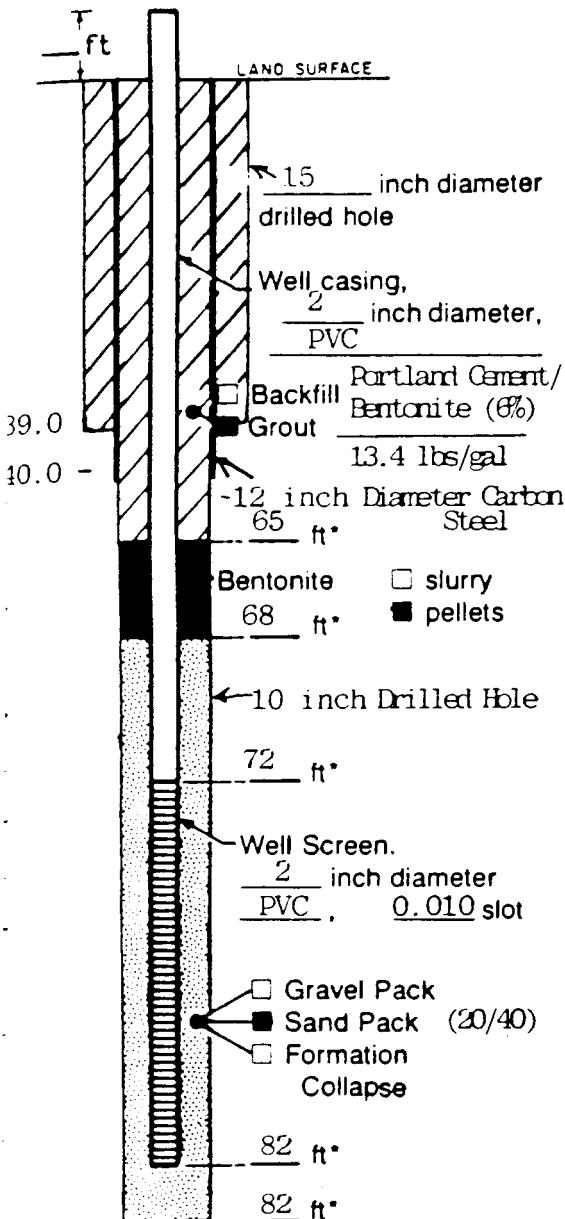


Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-6D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)	9-4-90/9-19-90/9-20-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne		
Drilling Fluid	Mud		
Development Techniques(s) and Date(s)			
9-25-90 Airlift			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	300	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	1.25	hours	
Yield	NA	gpm	Date 9-25-90
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks	NA		

WELL CONSTRUCTION LOG



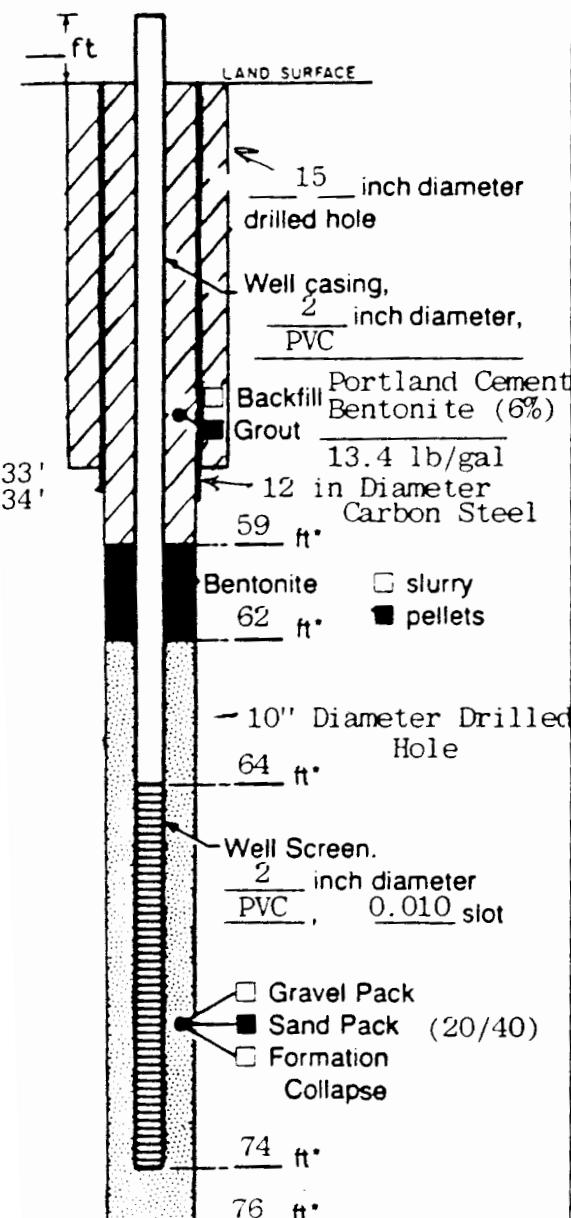
Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

Project	LA282.01 - Texaco	Well	MW-7D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation			
and Datum	NA	feet	<input type="checkbox"/> surveyed <input type="checkbox"/> estimated
Installation Dates(s)			
9-5-90/9-10-11-90			
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	Mud		
Development Techniques(s) and Date(s)			
9-13-90 Airlift			
Fluid Loss During Drilling	100	gallons	
Water Removed During Development	440	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	0.4	hours	
Yield	NA	gpm	Date 9-13-90
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Sample		
Remarks NA			

Prepared by Kipper W. Montgomery

WELL CONSTRUCTION LOG

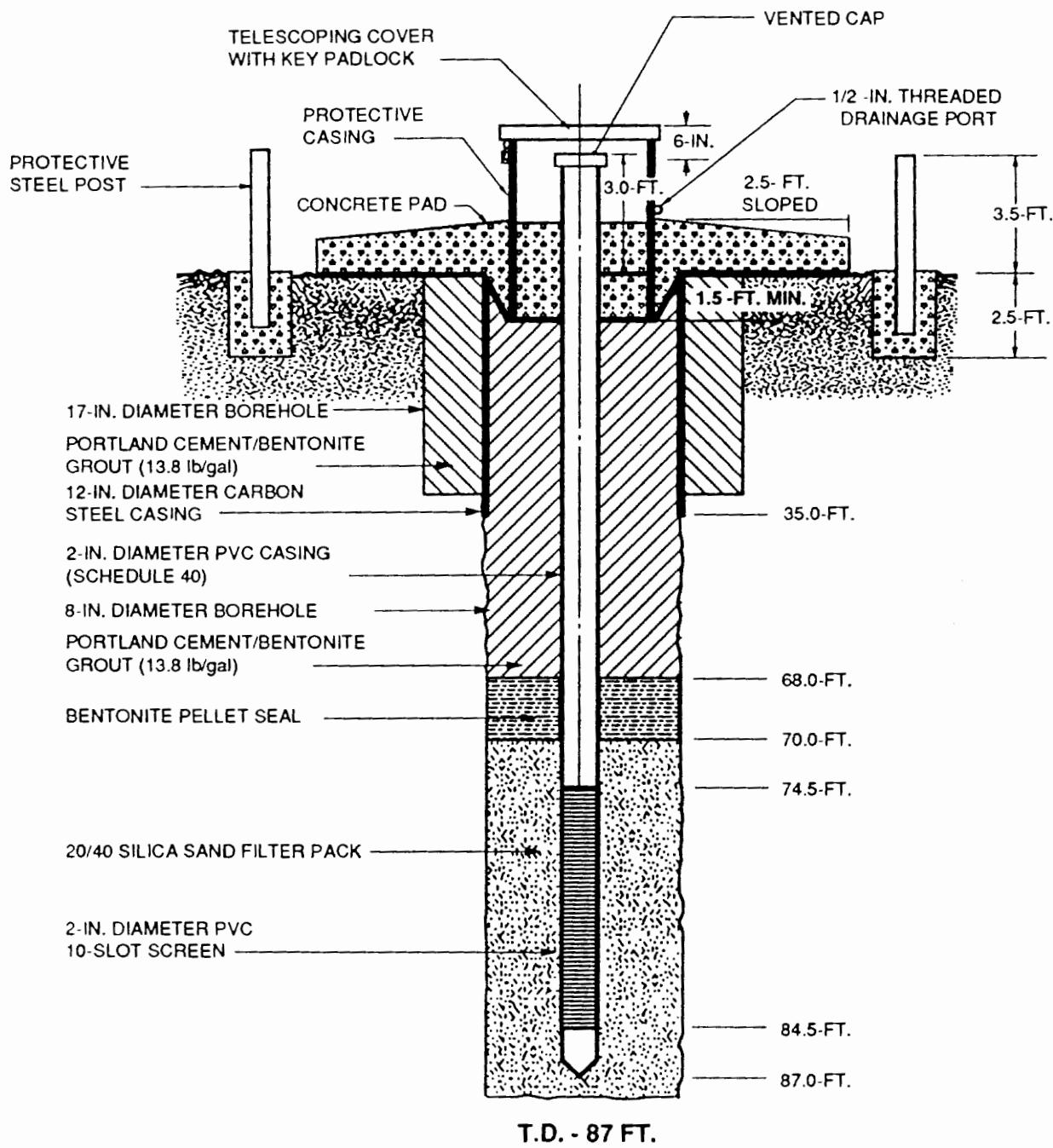


Measuring Point is Top of Well Casing Unless Otherwise Noted.

*Depth Below Land Surface

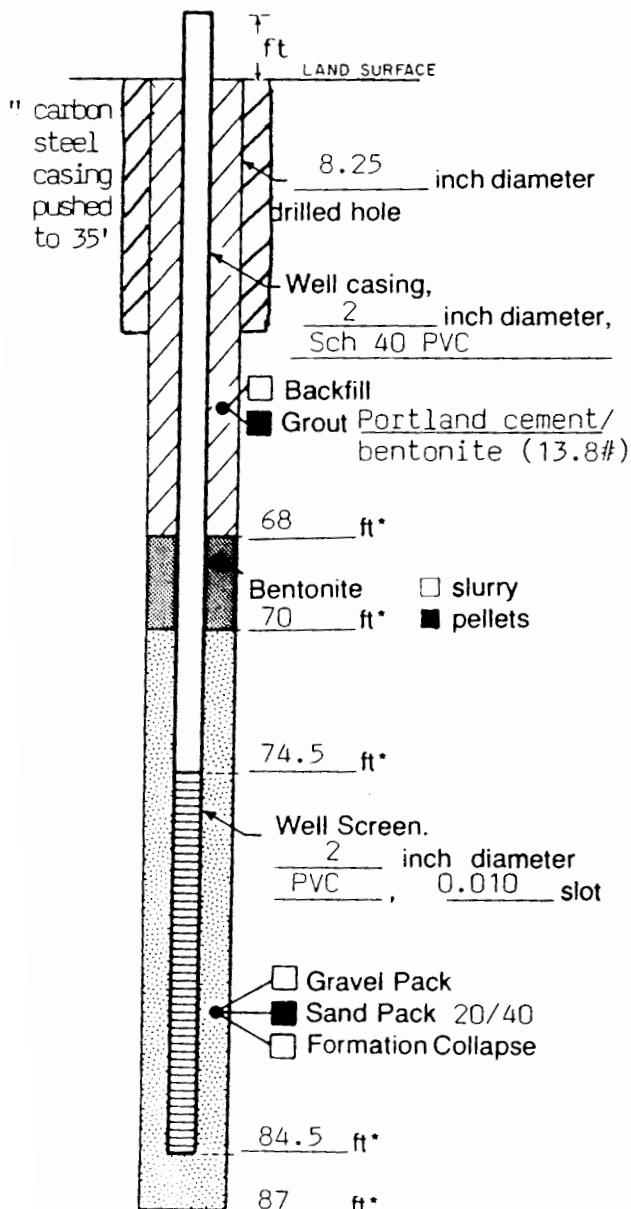
Project	LA282.01 - Texaco	Well	MW-8D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> surveyed <input checked="" type="checkbox"/> estimated
Installation Dates(s)	9-6-90/9-7-90/9-10-90		
Drilling Method	Hollow Stem/Mud Rotary		
Drilling Contractor	Layne Environmental Services		
Drilling Fluid	NA		
Development Techniques(s) and Date(s)			
9-13-90 Airlift			
Fluid Loss During Drilling	600	gallons	
Water Removed During Development	740	gallons	
Static Depth to Water	NA	feet below M.P.	
Pumping Depth to Water	NA	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	Date	NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Collect Groundwater Samples		
Remarks	NA		

Prepared by _____ Kipper W. Montgomery



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



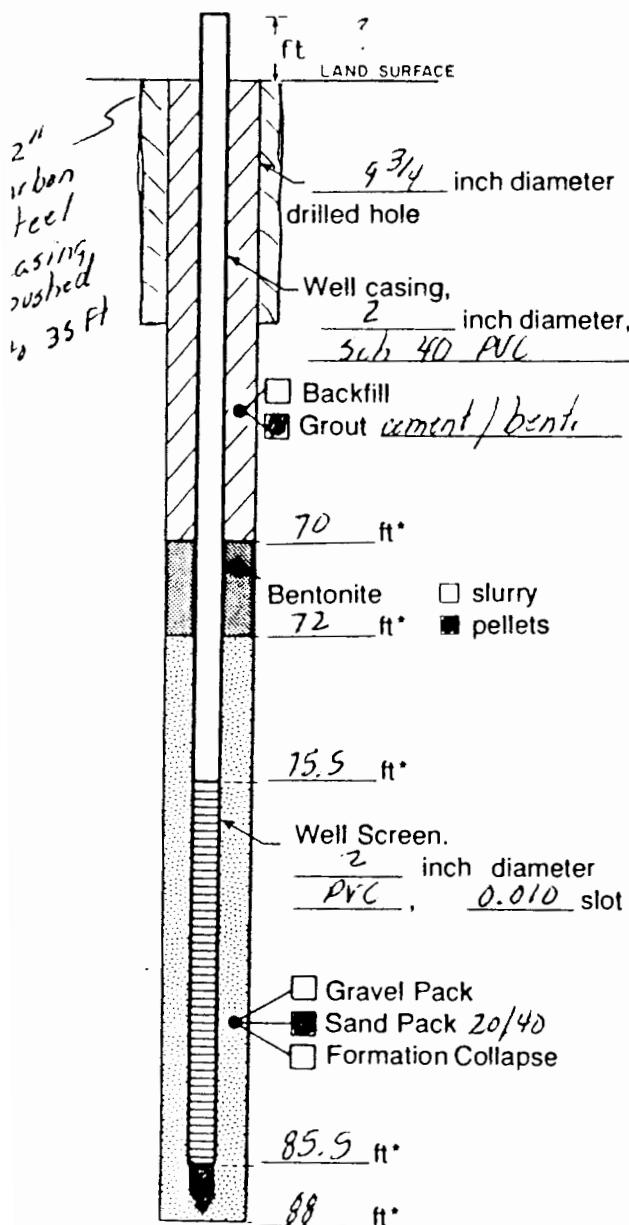
Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project	Texaco Chemical - LA490.01	Well	MW-11D
Town/City	Port Neches		
County	Jefferson	State	TEXas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	1/2/92 & 1/3/92		
Drilling Method	Mud Rotary/Hollow Stem		
Drilling Contractor	Layne		
Drilling Fluid	Potable water/none		
Development Technique(s) and Date(s)			
NA			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	NA gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA gpm	Date	NA
Specific Capacity	NA gpm/ft		
Well Purpose	NA		
Remarks			
Surface casing set inside a 17.75" diameter hole drilled via mud rotary. Surface casing grouted in place with a 13.8 lb/gal Portland cement/bentonite mixture.			
Prepared by T. Harrel			

WELL CONSTRUCTION LOG

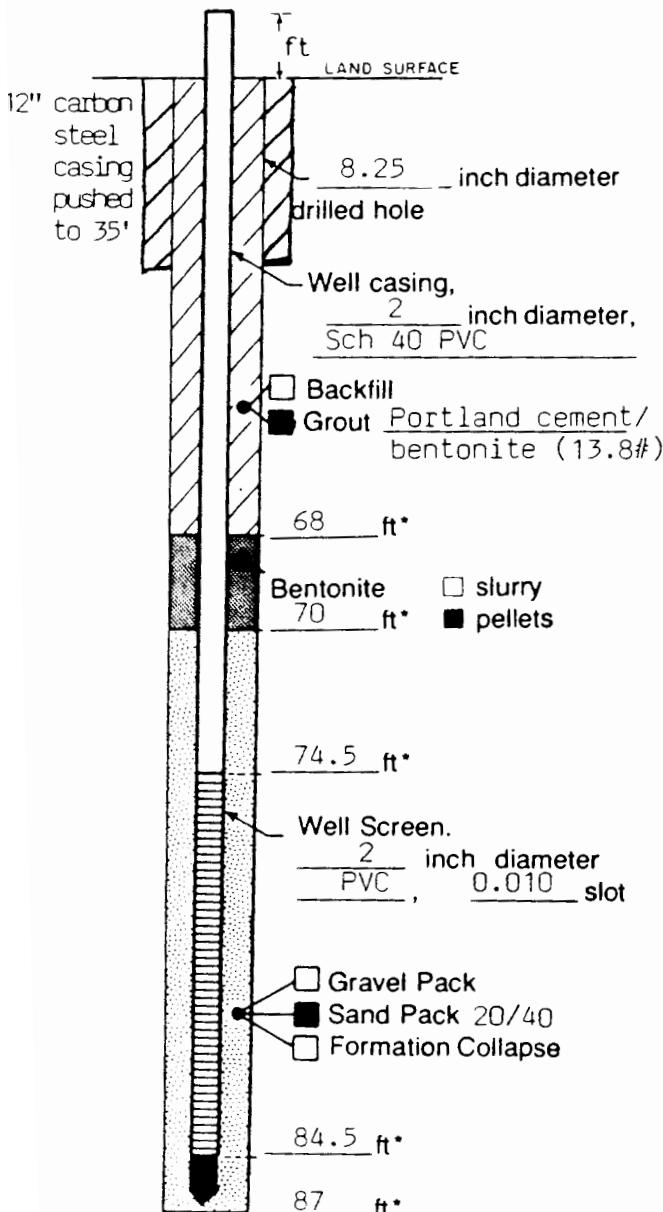
(UNCONSOLIDATED)



Project	LA 490.0/	Well	MW-12D
Town/City	Port Neches		
County	Jefferson		
State	TX		
Permit No.			
Land-Surface Elevation			
and Datum	feet		
	<input type="checkbox"/> Surveyed		
	<input type="checkbox"/> Estimated		
Installation Date(s)	12-5-91		
Drilling Method	Mud Rotary / Hollow stem		
Drilling Contractor	Layne		
Drilling Fluid	potable water / none		
Development Technique(s) and Date(s)			
NA			
Fluid Loss During Drilling	NA gallon:		
Water Removed During Development	NA gallon:		
Static Depth to Water	NA feet below M.F.		
Pumping Depth to Water	NA feet below M.F.		
Pumping Duration	NA hours		
Yield	NA gpm		
Specific Capacity	NA gpm/ft		
Well Purpose			
Remarks			
Prepared by T. Harrel			

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)

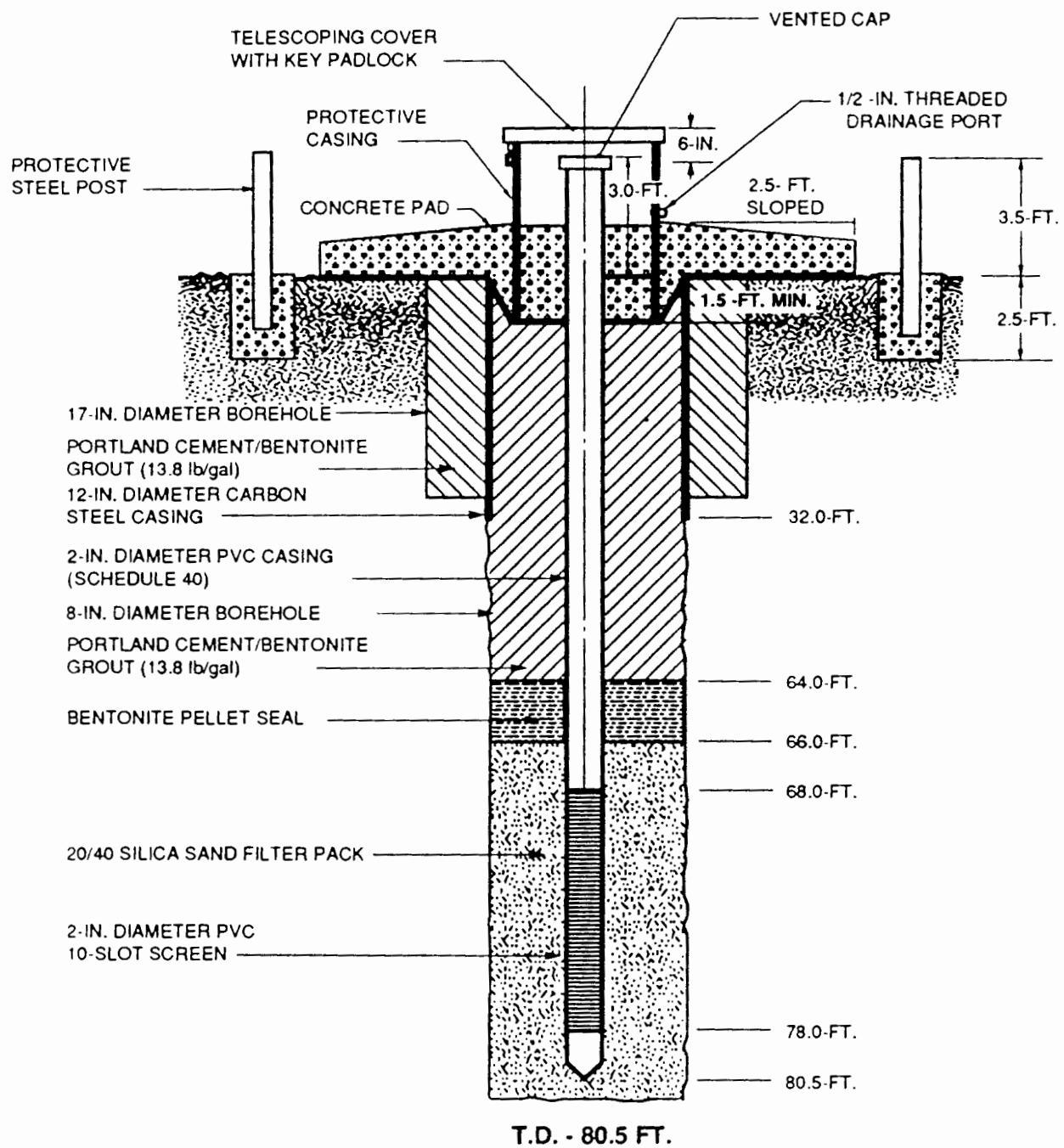


Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

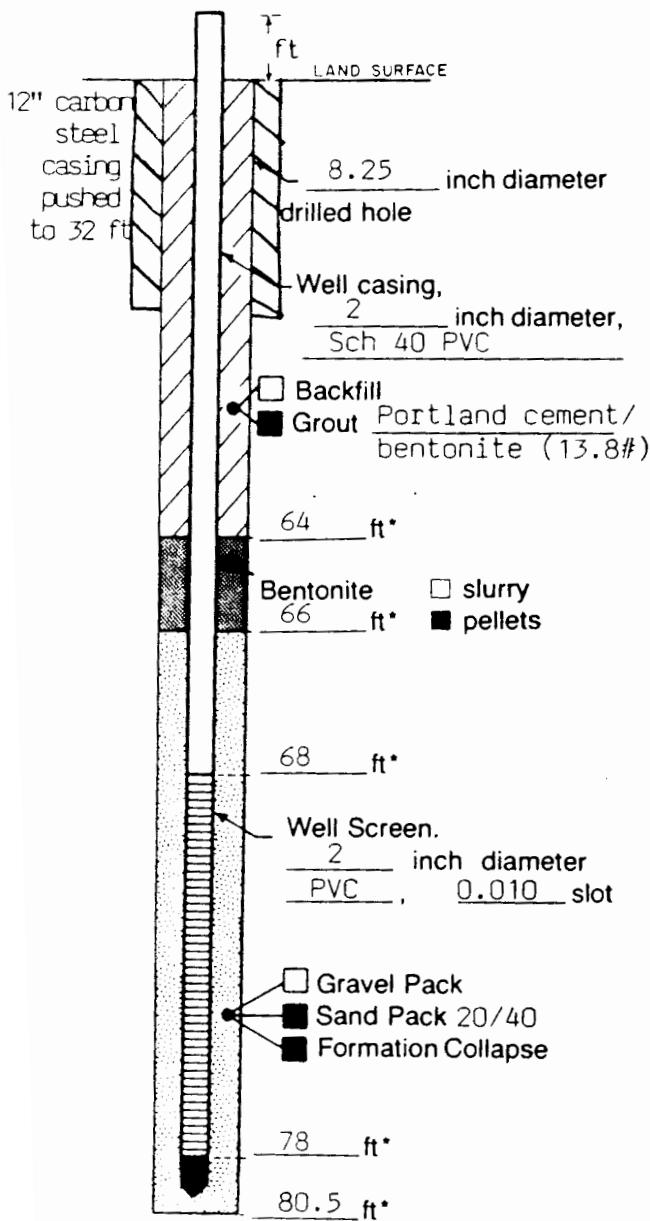
*Depth Below Land Surface

Project	Texaco Chemical - LA490.01 Well MW-13D	
Town/City	Port Neches	
County	Jefferson	State Texas
Permit No.	NA	
Land-Surface Elevation and Datum	NA	feet
	<input type="checkbox"/> Surveyed	
	<input type="checkbox"/> Estimated	
Installation Date(s)	1/4/92 & 1/5/92	
Drilling Method	Mud Rotary/Hollow Stem	
Drilling Contractor	Layne	
Drilling Fluid	Potable water/none	
Development Technique(s) and Date(s)		
NA		
Fluid Loss During Drilling	NA gallons	
Water Removed During Development	NA gallons	
Static Depth to Water	NA feet below M.P	
Pumping Depth to Water	NA feet below M.P	
Pumping Duration	NA hours	
Yield	NA gpm	Date NA
Specific Capacity	NA gpm/ft	
Well Purpose	NA	
Remarks		
Surface casing set inside a 17.75" diameter hole drilled via mud rotary. Surface casing grouted in place with a 13.8 lbs/gal Portland cement/bentonite mixture.		

Prepared by T. Harrel



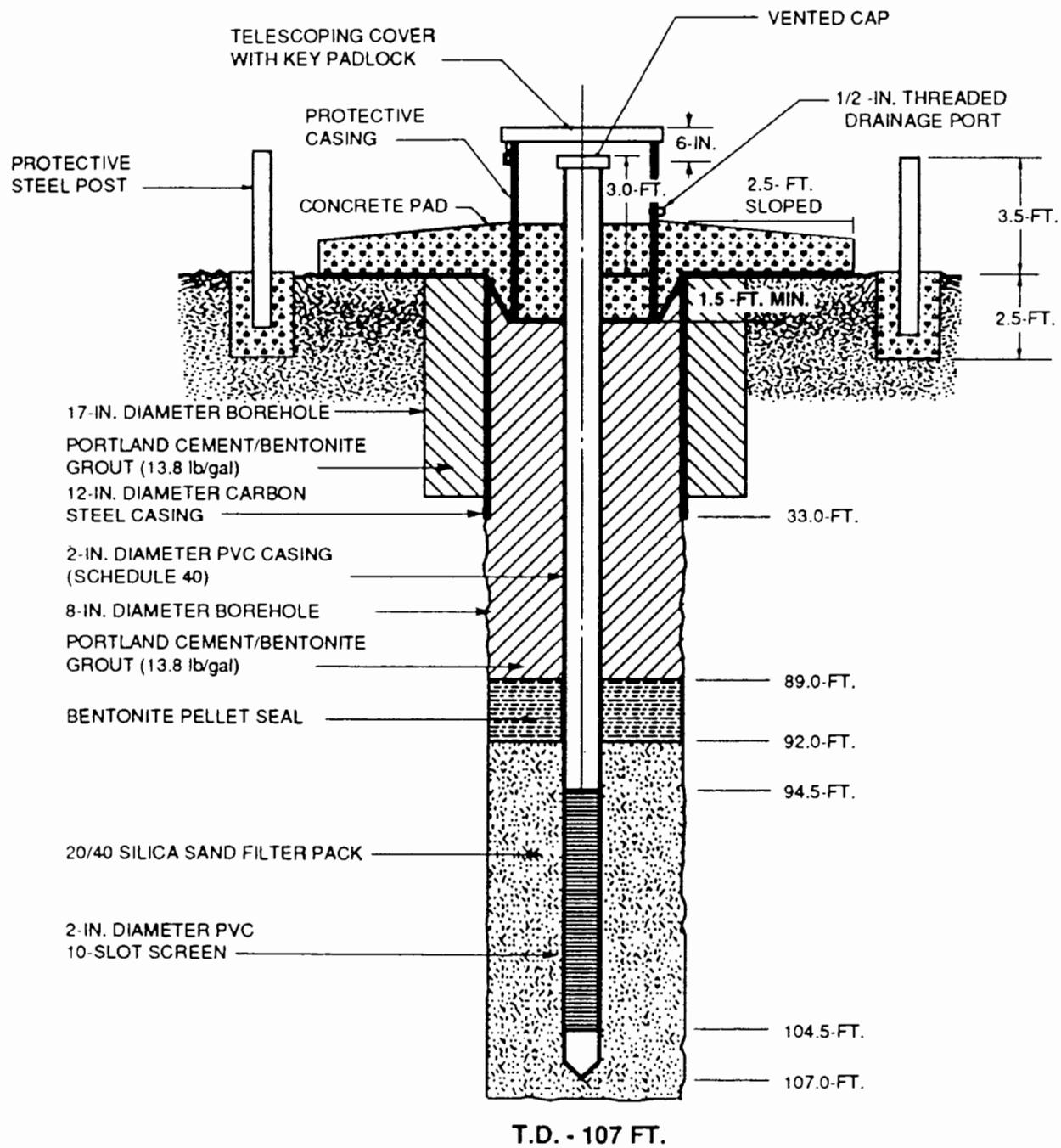
WELL CONSTRUCTION LOG (UNCONSOLIDATED)



Measuring Point is
 Top of Well Casing
 Unless Otherwise Noted.

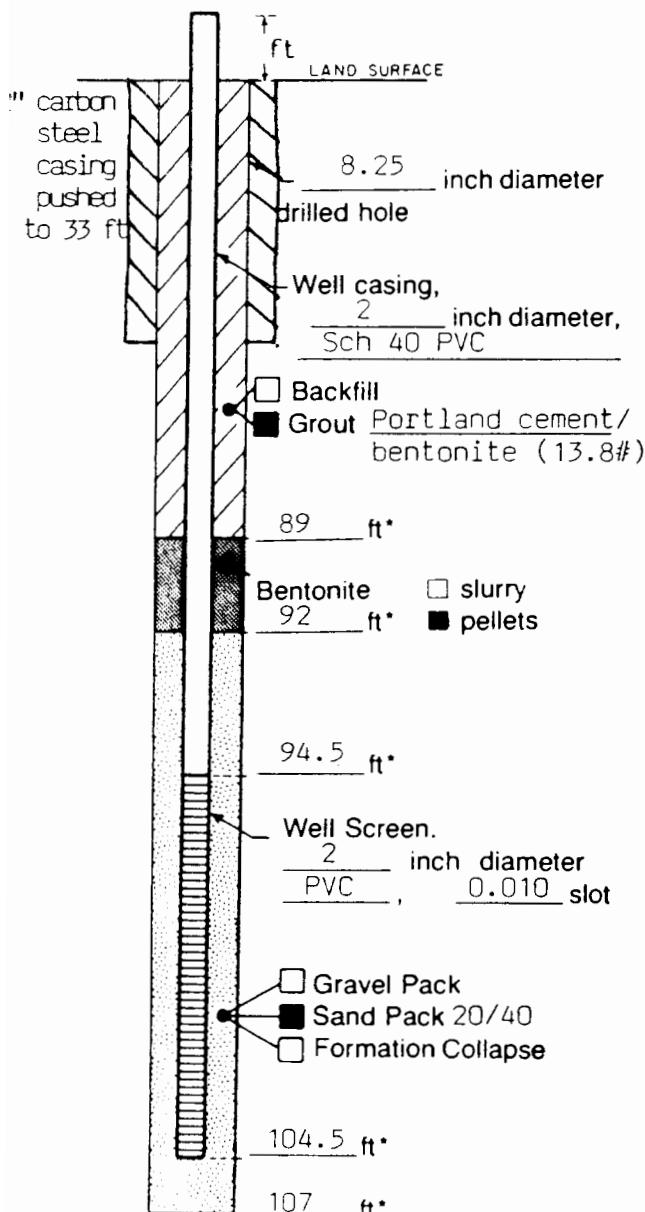
*Depth Below Land Surface

Project	Texaco Chemical - LA490.01	Well	MW-15D
Town/City	Port Neches		
County	Jefferson	State	Texas
Permit No.	NA		
Land-Surface Elevation and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	12/10/91 & 12/11/91		
Drilling Method	Mud Rotary/Hollow Stem		
Drilling Contractor	Layne		
Drilling Fluid	Potable water/none		
Development Technique(s) and Date(s)			
NA			
Fluid Loss During Drilling	NA gallons		
Water Removed During Development	NA gallons		
Static Depth to Water	NA feet below M.P.		
Pumping Depth to Water	NA feet below M.P.		
Pumping Duration	NA hours		
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	NA		
Remarks			
Surface casing set inside a 17.75" diameter hole drilled via mud rotary. Surface casing grouted in place with a 13.8 lbs/gal Portland cement/bentonite mixture.			
Prepared by T. Harrel			



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project Texaco Chemical - LA490.01 Well MW-16D

Town/City Port Neches

County Jefferson State Texas

Permit No. NA

Land-Surface Elevation

and Datum NA feet

Surveyed

Estimated

Installation Date(s) 12/16/91

Drilling Method Mud Rotary/Hollow Stem

Drilling Contractor Layne

Drilling Fluid Potable water/none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling NA gallons

Water Removed During Development NA gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration NA hours

Yield NA gpm

Date NA

Specific Capacity NA gpm/ft

Well Purpose NA

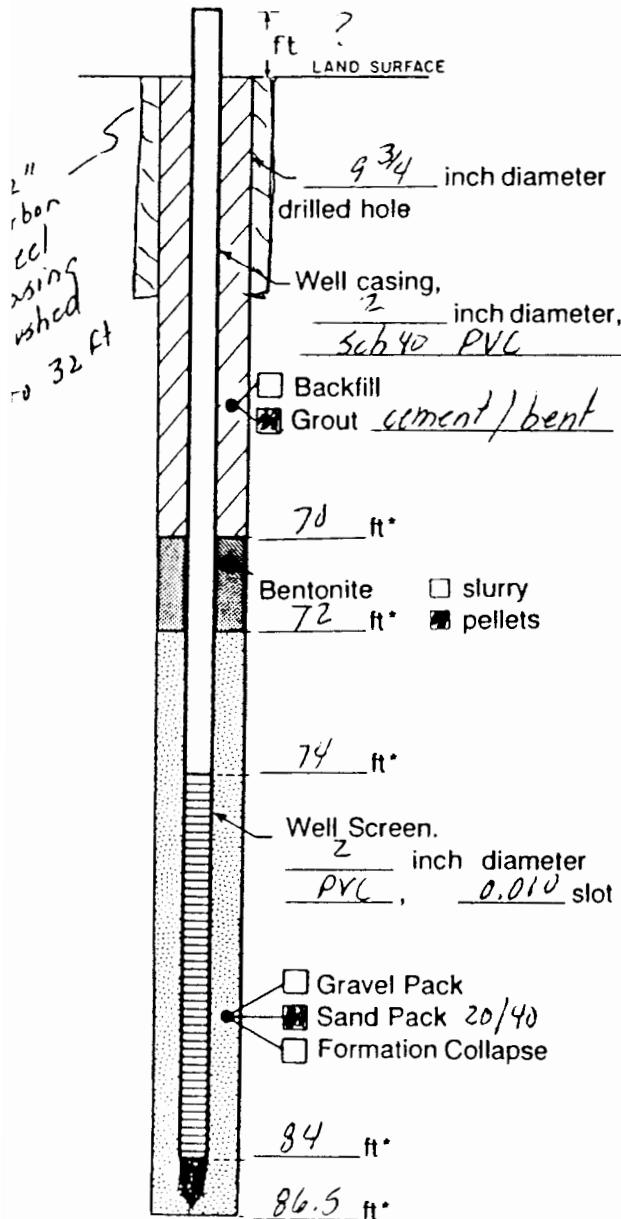
Remarks

Surface casing set inside a 17.75" diameter hole
drilled via mud rotary. Surface casing grouted
in place with a 13.8 lbs/gal Portland cement/
bentonite mixture.

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LA 490.01 Well MW-18D

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation _____ feet

and Datum _____ feet Surveyed
 Estimated

Installation Date(s) 12-3-91 / 12-4-91

Drilling Method Mud Rotary / Hollow Stem

Drilling Contractor Layne

Drilling Fluid Potable Water / None

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling NA gallons

Water Removed During Development NA gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration NA hours

Yield NA gpm Date _____

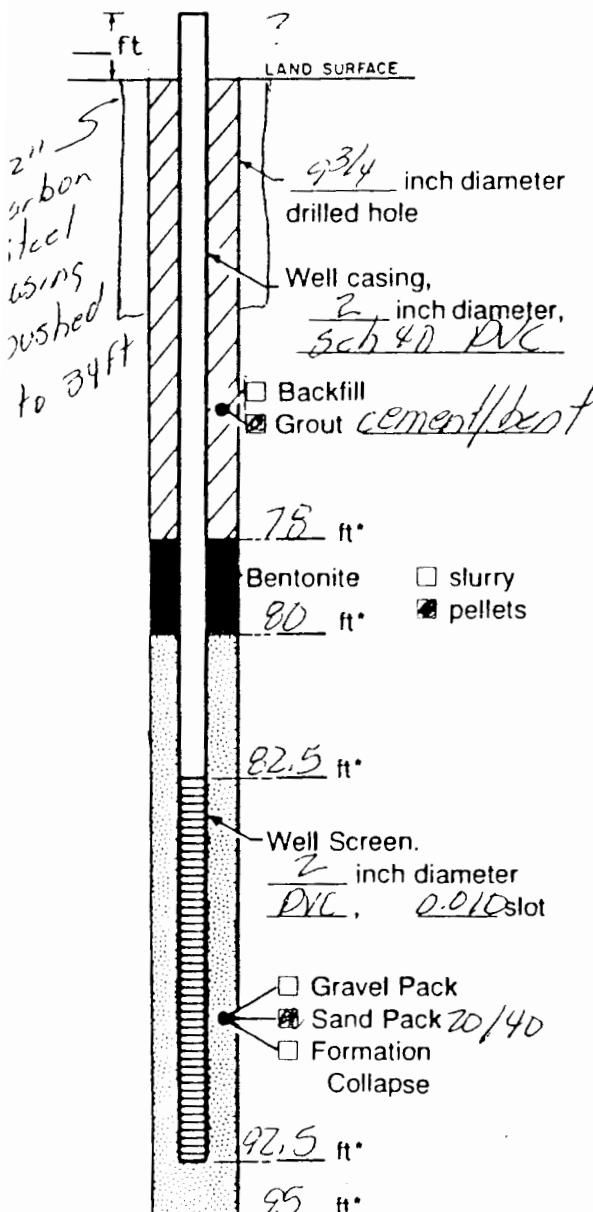
Specific Capacity NA gpm/ft

Well Purpose _____

Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG



Measuring Point is Top of
Well Casing Unless Otherwise
Noted.

*Depth Below
Land Surface

Project LA490.01 Texaco Well MW-19D

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

surveyed

estimated

Installation Dates(s) 12-8-91 & 12-9-91

Drilling Method Mud Rotary / Hollow Stem

Drilling Contractor Layne

Drilling Fluid Potable water / none

Development Techniques(s) and Date(s)

NA

Fluid Loss During Drilling NA gallons

Water Removed During Development NA gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration 1/4 hours

Yield NA gpm Date _____

Specific Capacity NA gpm/ft

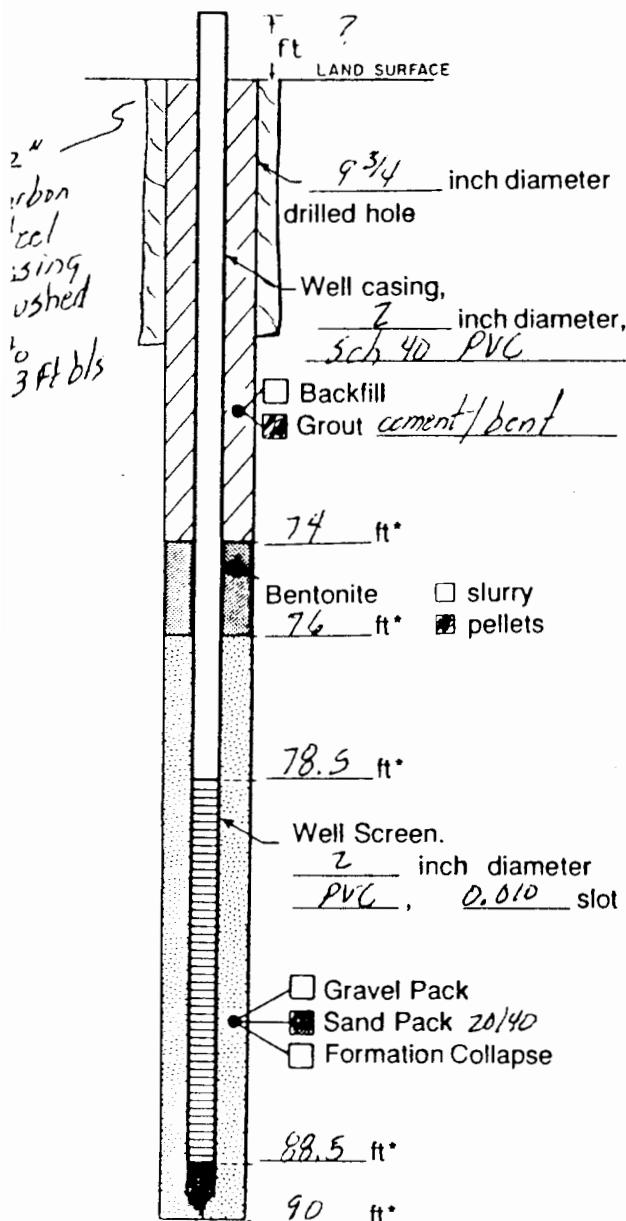
Well Purpose _____

Remarks _____

Prepared by T. Harrel

WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

Project LA 490.01 Well MW-22D

Town/City Port Neches

County Jefferson State TX

Permit No. _____

Land-Surface Elevation

and Datum _____ feet

Surveyed

Estimated

Installation Date(s) 12-6-91 / 12-7-91

Drilling Method Mud Rotary / Hollow Stem

Drilling Contractor Layne

Drilling Fluid potable water / none

Development Technique(s) and Date(s)

NA

Fluid Loss During Drilling NA gallons

Water Removed During Development NA gallons

Static Depth to Water NA feet below M.P.

Pumping Depth to Water NA feet below M.P.

Pumping Duration NA hours

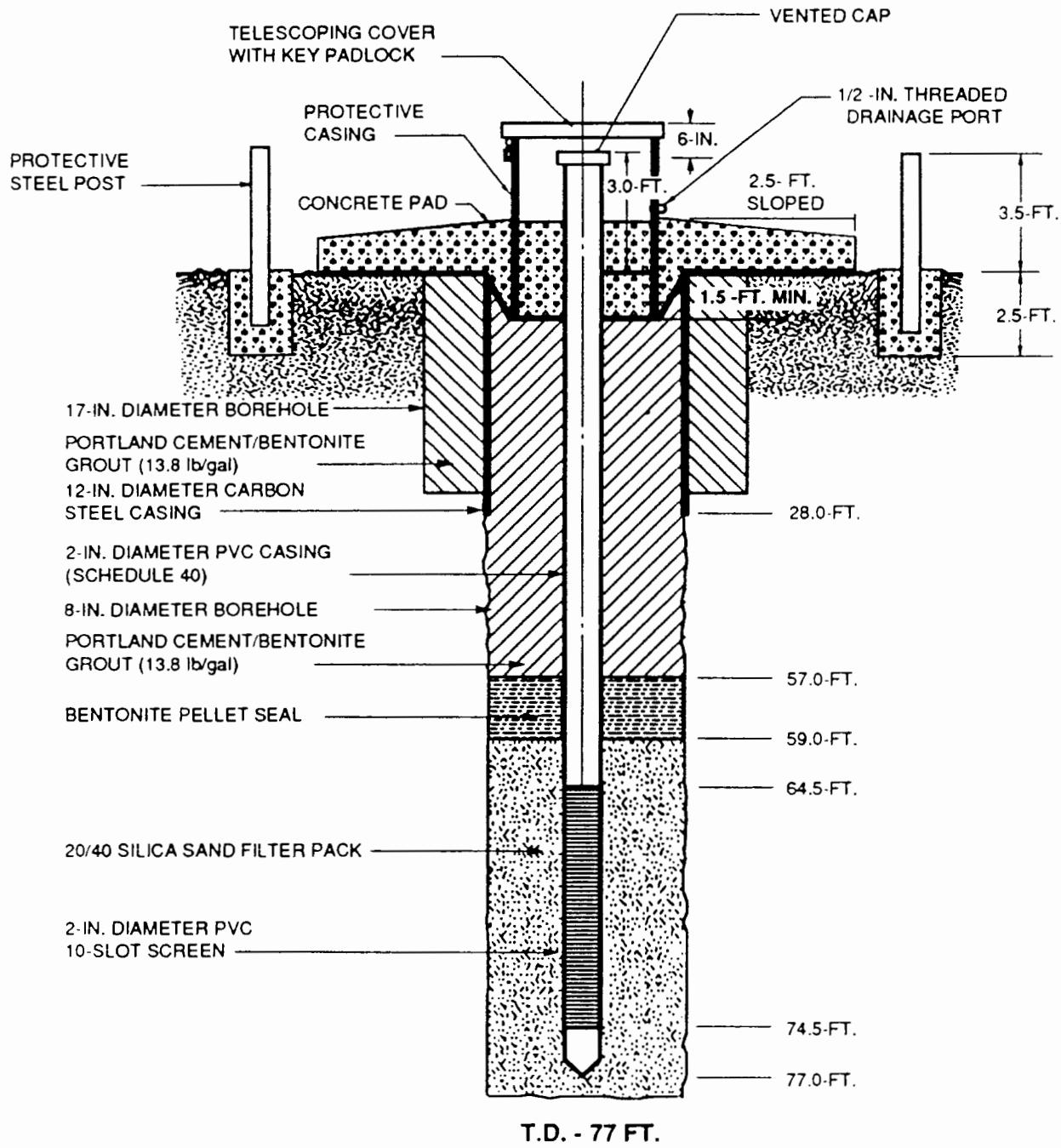
Yield NA gpm Date _____

Specific Capacity NA gpm/ft

Well Purpose _____

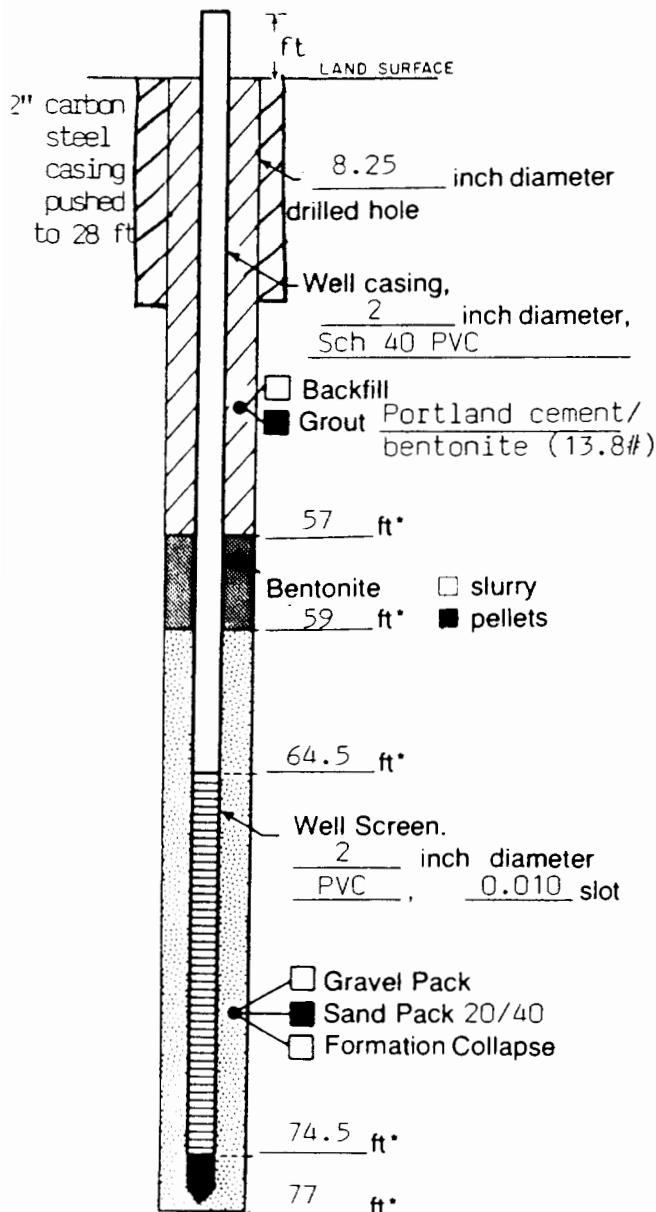
Remarks _____

Prepared by T. Hare



WELL CONSTRUCTION LOG

(UNCONSOLIDATED)



Measuring Point is
Top of Well Casing
Unless Otherwise Noted.

*Depth Below Land Surface

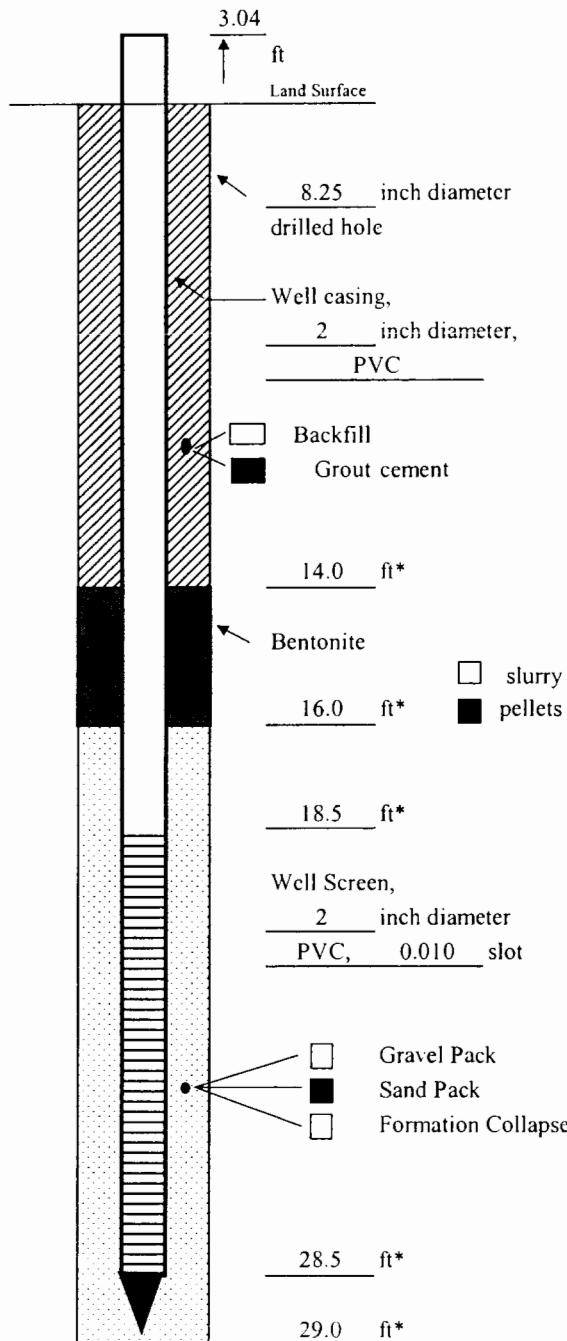
Project	Texaco Chemical - LA490.01	Well	MW-28D
Town/City	Port Neches		
County	Jefferson		
State	Texas		
Permit No.	NA		
Land-Surface Elevation			
and Datum	NA	feet	<input type="checkbox"/> Surveyed <input type="checkbox"/> Estimated
Installation Date(s)	12/20/91 & 12/21/91		
Drilling Method	Mud Rotary/Hollow Stem		
Drilling Contractor	Layne		
Drilling Fluid	Potable water/none		
Development Technique(s) and Date(s)			
NA			
Fluid Loss During Drilling NA gallons			
Water Removed During Development NA gallons			
Static Depth to Water NA feet below M.P.			
Pumping Depth to Water NA feet below M.P.			
Pumping Duration NA hours			
Yield	NA	gpm	Date NA
Specific Capacity NA gpm/ft			
Well Purpose NA			
Remarks			
Surface casing set inside a 17.75" diameter hole			
drilled via mud rotary. Surface casing grouted			
in place with a 13.8 lbs/gal Portland cement/bentonite mixture.			

Prepared by T. Harrel



ARCADIS

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

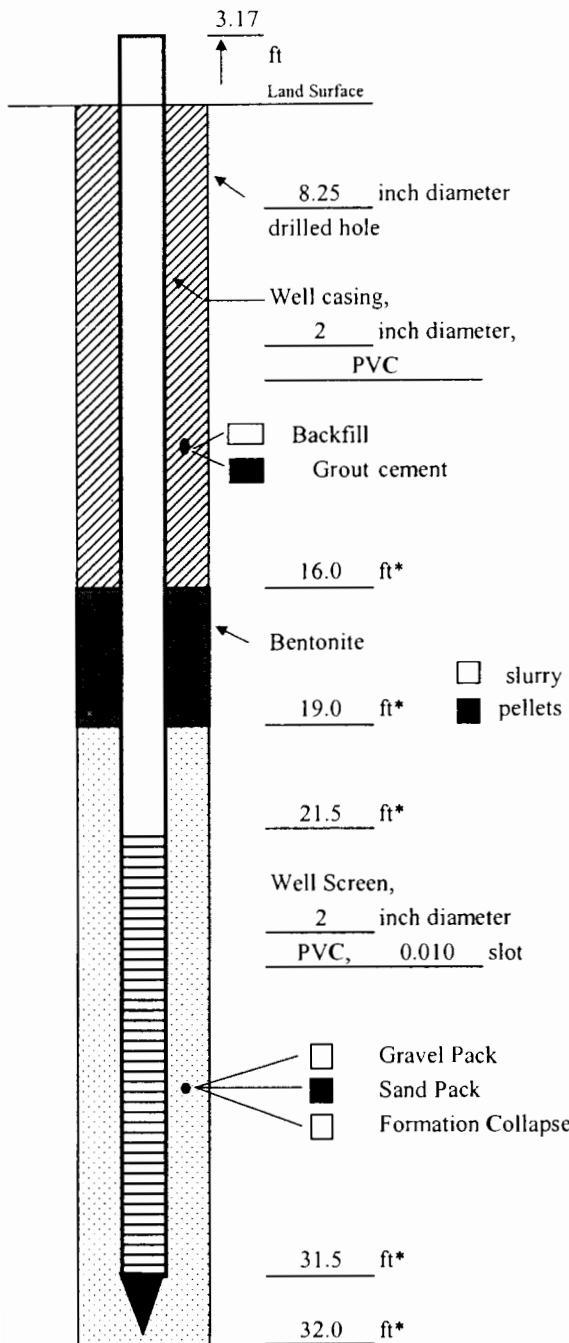
* Depth Below Land Surface

Project	Huntman/LA002459.0001.00003	Well	MW-36
Town/City	Port Neches		
County/Parish	Jefferson	State	Texas
Permit Number	NA		
Land-Surface Elevation and Datum	16.96 feet	<input checked="" type="checkbox"/> Surveyed <input type="checkbox"/> Estimated	
Installation Date(s)	06-21-04		
Drilling Method	Hollow Stem		
Drilling Contractor	CCI		
Drilling Fluid	None		
Development Technique(s) and Date(s)			
Hand bail (55 gallons) 6-28-04			
Purge Pump (45 gallons) 7-1-04			
Fluid Loss During Drilling	NA	gallons	
Water Removed During Development	100	gallons	
Static Depth to Water	5.14	feet below M.P.	
Pumping Depth to Water	32	feet below M.P.	
Pumping Duration	NA	hours	
Yield	NA	gpm	Date NA
Specific Capacity	NA	gpm/ft	
Well Purpose	Monitor Well		
Remarks			
Prepared by	George Cook		



ARCADIS

WELL CONSTRUCTION LOG



Measuring Point is Top of Well Casing Unless Otherwise Noted.

* Depth Below Land Surface

Project	Huntman/LA002459.0001.00003	Well	MW-37
Town/City	Port Neches		
County/Parish	Jefferson	State	Texas
Permit Number	NA		
Land-Surface Elevation and Datum	15.22 feet		

Surveyed Estimated

Installation Date(s)	06-21-04
Drilling Method	Hollow Stem
Drilling Contractor	CCI
Drilling Fluid	None

Development Technique(s) and Date(s)
Hand bail (40 gallons) 6-28-04
Purge Pump (60 gallons) 7-1-04

Fluid Loss During Drilling	NA	gallons
Water Removed During Development	100	gallons
Static Depth to Water	4.03	feet below M.P.
Pumping Depth to Water	30.5	feet below M.P.
Pumping Duration	NA	hours
Yield	NA	gpm
Specific Capacity	NA	gpm/ft
Well Purpose	Monitor Well	

Remarks

Prepared by George Cook

SLUG TESTS

Geraghty & Miller personnel conducted site-specific aquifer tests on "A-Zone" Monitor Wells MW-1, MW-4, MW-7, and MW-8 and "B-Zone" Monitor Wells MW-1D, MW-4D, MW-7D, and MW-8D to evaluate the hydrologic characteristics of water-bearing zones. Both falling head (slug in) and rising head (slug out) tests were conducted because some monitor well screens were fully saturated and other screens were partially saturated.

Upon arriving on site, the locking well caps were removed from the monitor wells and the water levels were allowed to equilibrate for approximately 15 minutes. After the equilibration period, the water levels in each well were measured and recorded in the field logbook, according to the following methodology.

A pressure transducer was lowered into the well at a depth of approximately 1 foot from the bottom of the well. After allowing the water level to equilibrate, a decontaminated solid polyvinyl chloride slug was lowered into the well. As the slug was lowered, the datalogger was activated so that the change in water level (falling head) could be recorded. The recording of water level data continued until the water level returned to the initial water level or sufficient data were collected to establish the infiltration trend.

After completing the slug-in test, the datalogger was started and the slug was removed from the well. The change in water level (rising head) was recorded until the water level reached the initial water level or sufficient data were collected to establish the recharge trend.

All slug test data were downloaded from the datalogger and imported into AQTESOLV for Windows software. The software allowed the normalized water level elevations to be plotted against discrete time intervals on a semi-log graph. The resulting hydraulic conductivity (K) values were then calculated. The slug out (rising head) results are summarized below.

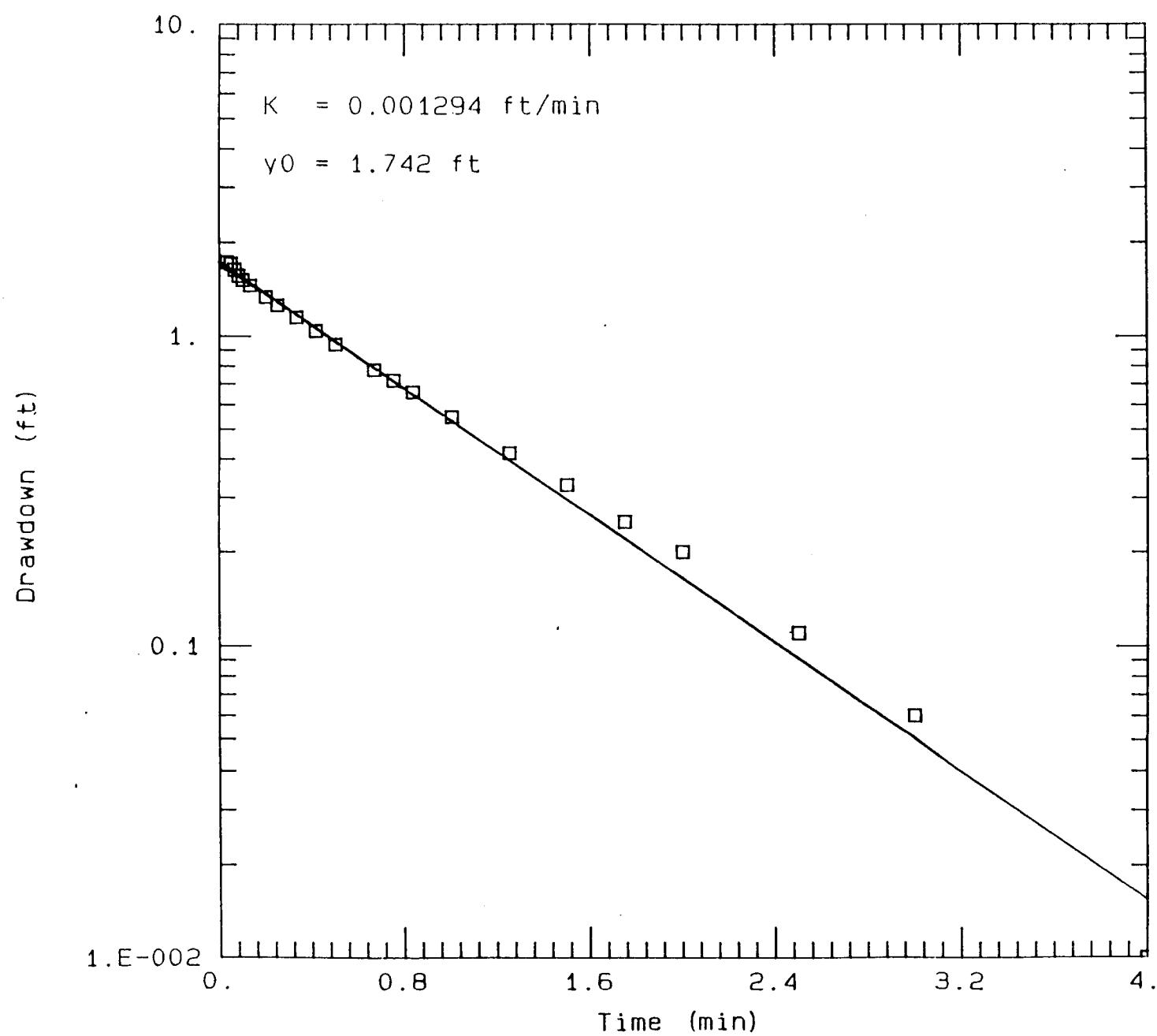
Monitor Well	Test	K (ft/min)	K (ft/day)	K (cm/sec)
"A-Zone"				
MW-1	Slug Out	0.001294	1.86336	6.58×10^{-4}
MW-4	Slug Out	0.003953	5.69232	2.01×10^{-3}
MW-7	Slug Out	0.003597	5.17968	1.83×10^{-3}
MW-8	Slug Out	0.002844	4.09536	1.45×10^{-3}
A-Zone Average K		0.002844	4.21	1.49×10^{-3}
"B-Zone"				
MW-1D	Slug Out	0.002225	3.204	1.13×10^{-3}
MW-4D	Slug Out	0.0122	17.568	6.20×10^{-3}
MW-7D	Slug Out	0.01532	22.0608	7.79×10^{-3}
MW-8D	Slug Out	0.01669	24.0336	8.48×10^{-3}
B-Zone Average K		0.011609	16.72	5.9×10^{-3}

ft/min feet per minute

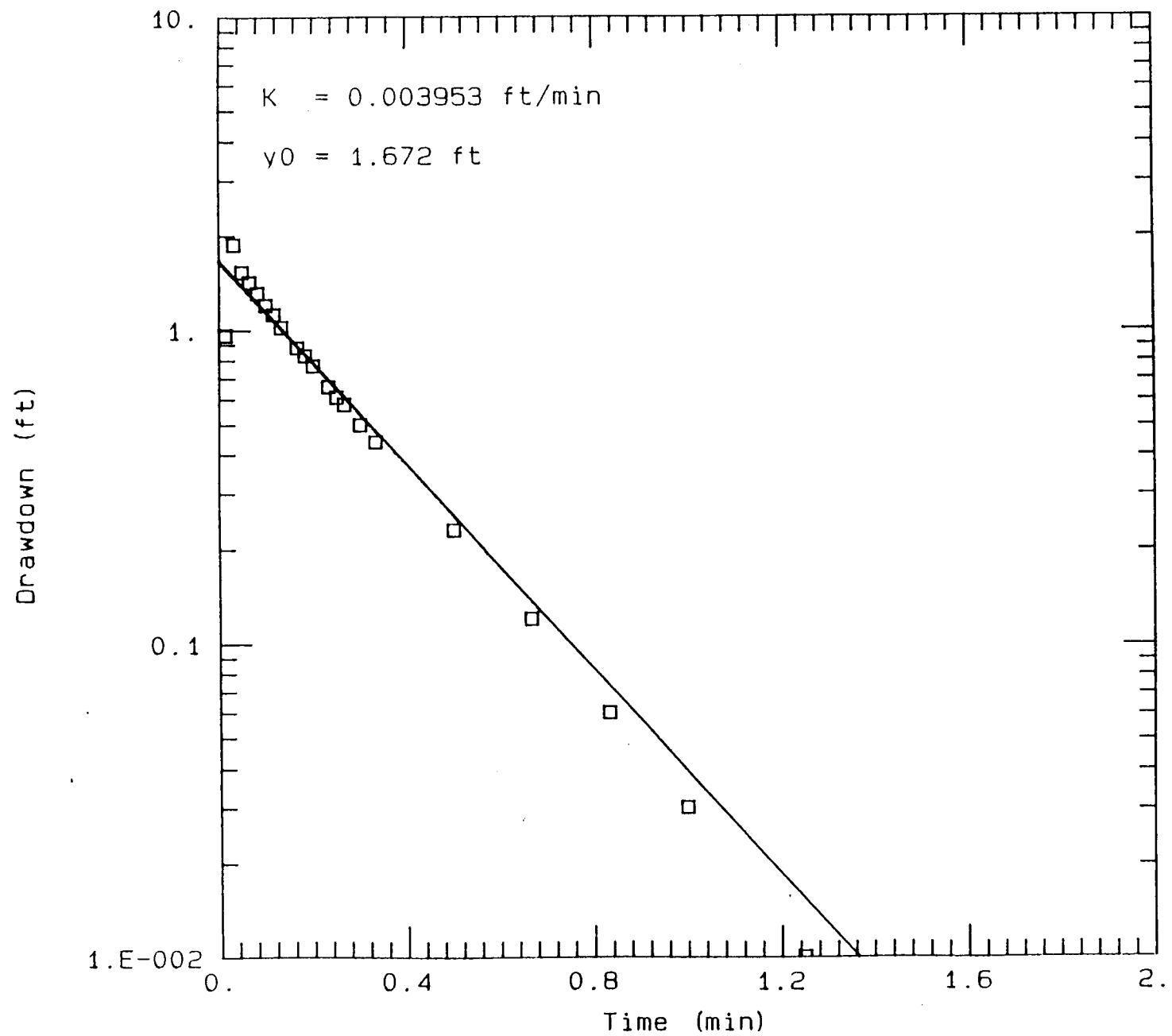
ft/day feet per day

cm/sec centimeters per second

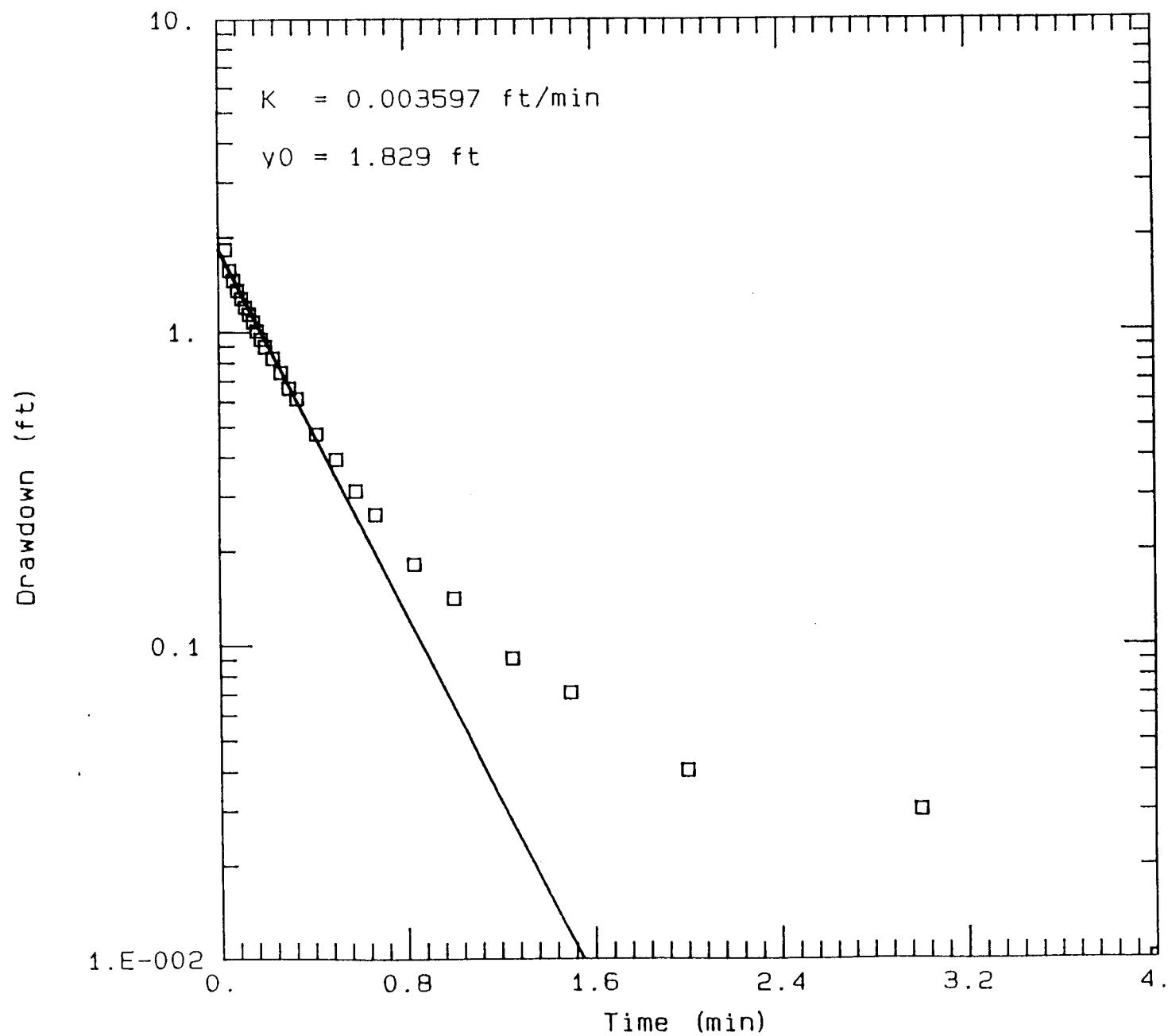
Texaco PNCP, Texas: well MW-1, slug out



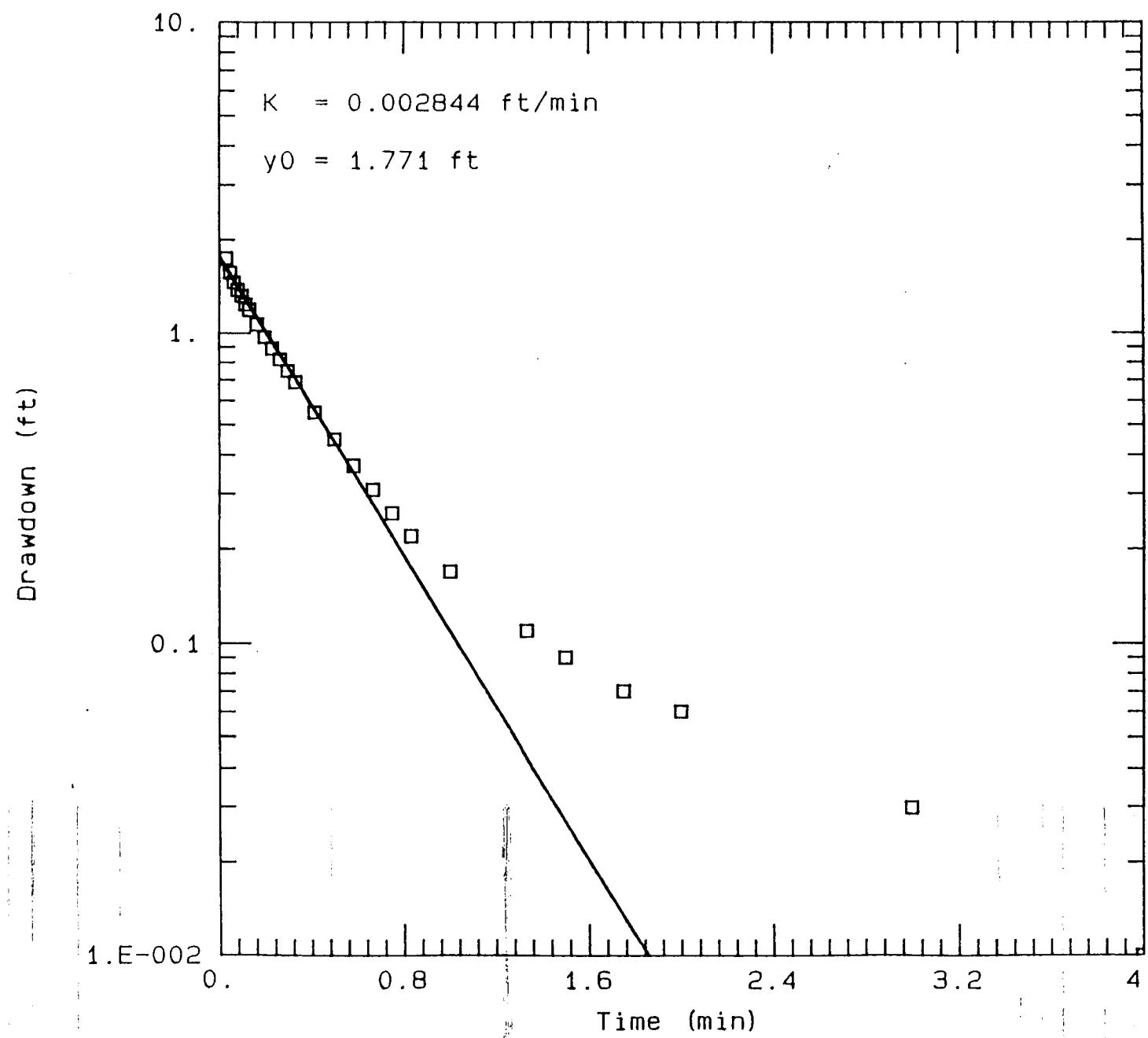
Texaco PNCP, Texas: well MW-4, slug out



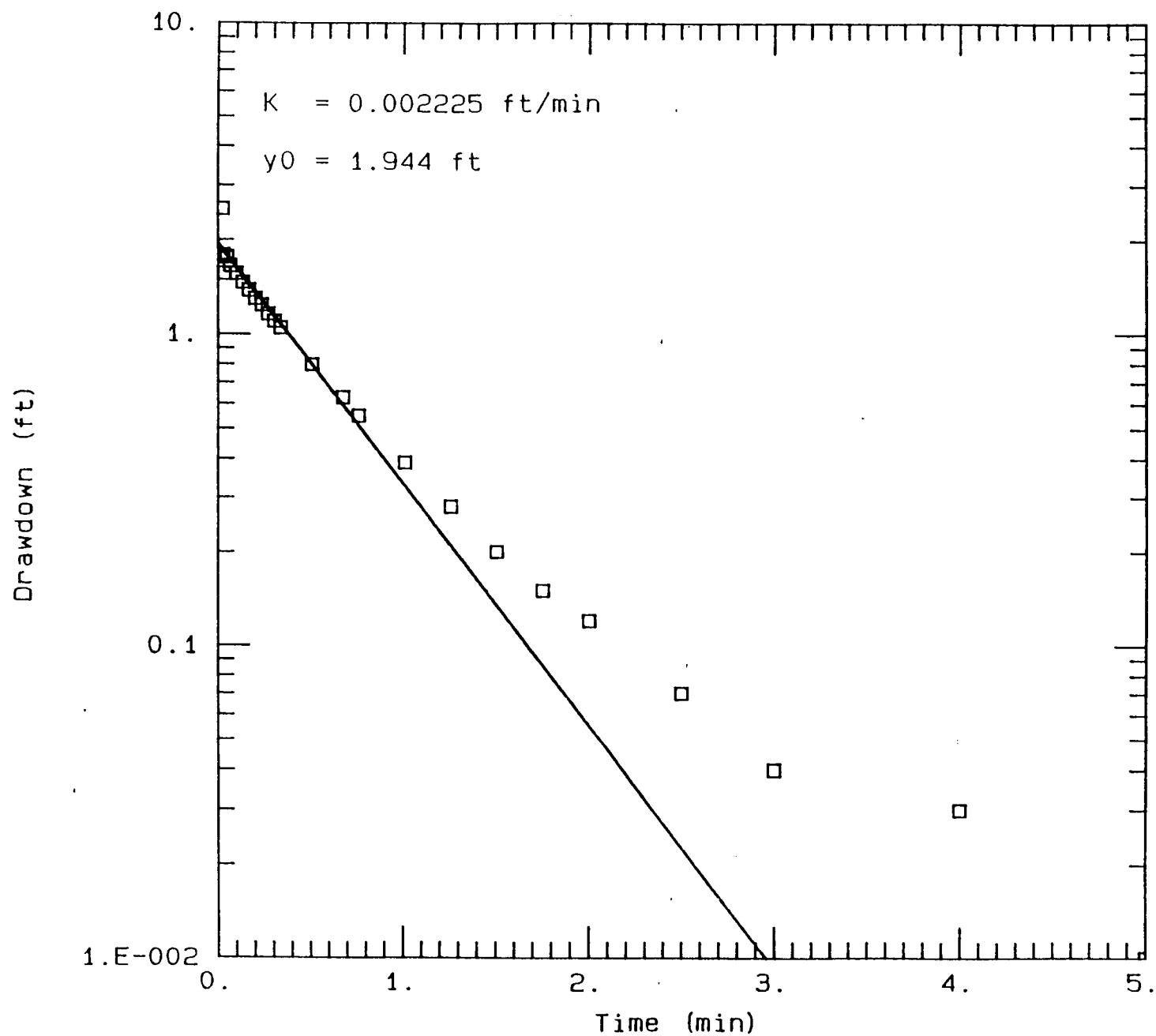
Texaco PNCP, Texas: well MW-7, slug out



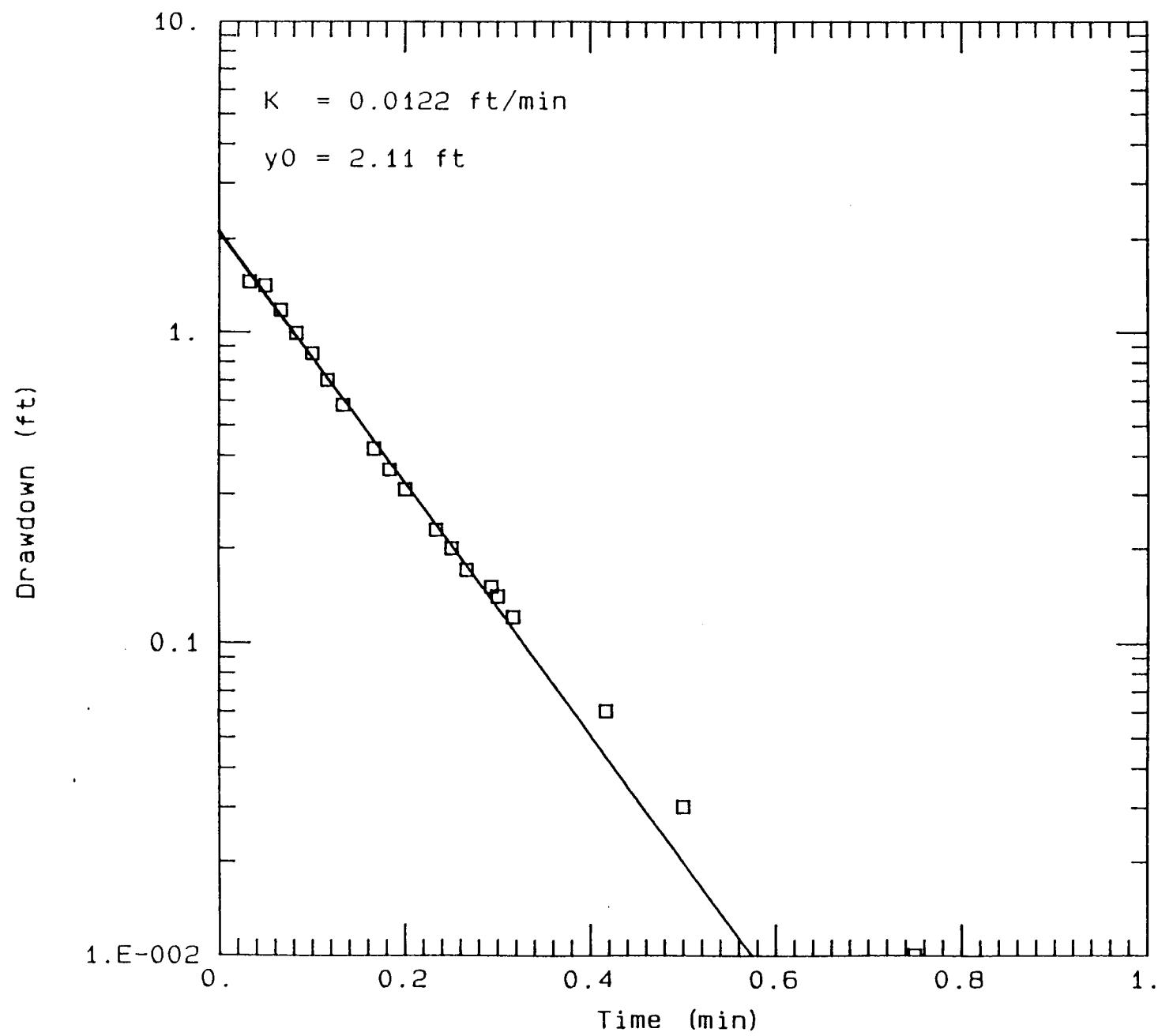
Texaco PNCP, Texas: well MW-8, slug out



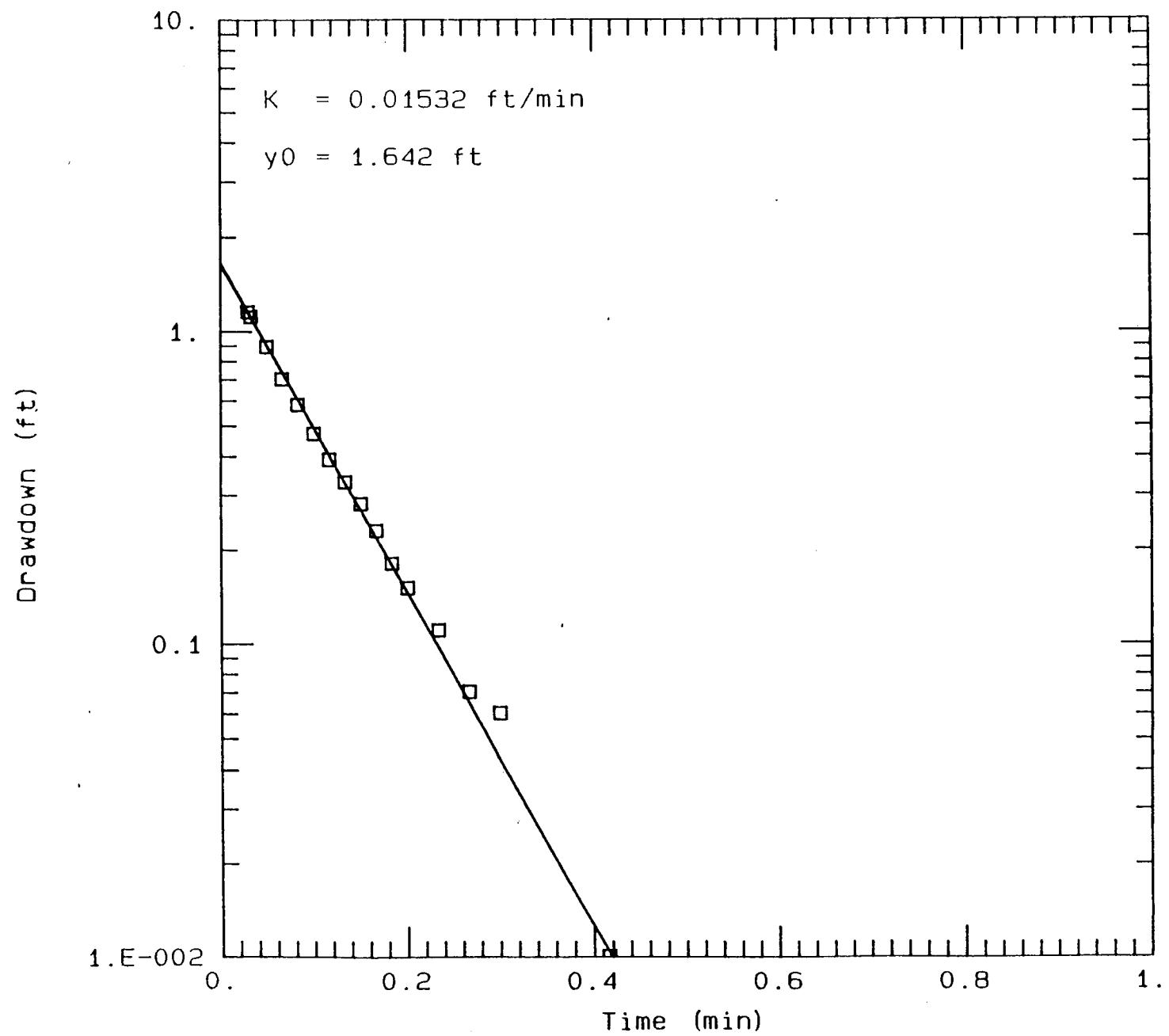
Texaco PNCP, Texas: well MW-1D, slug out



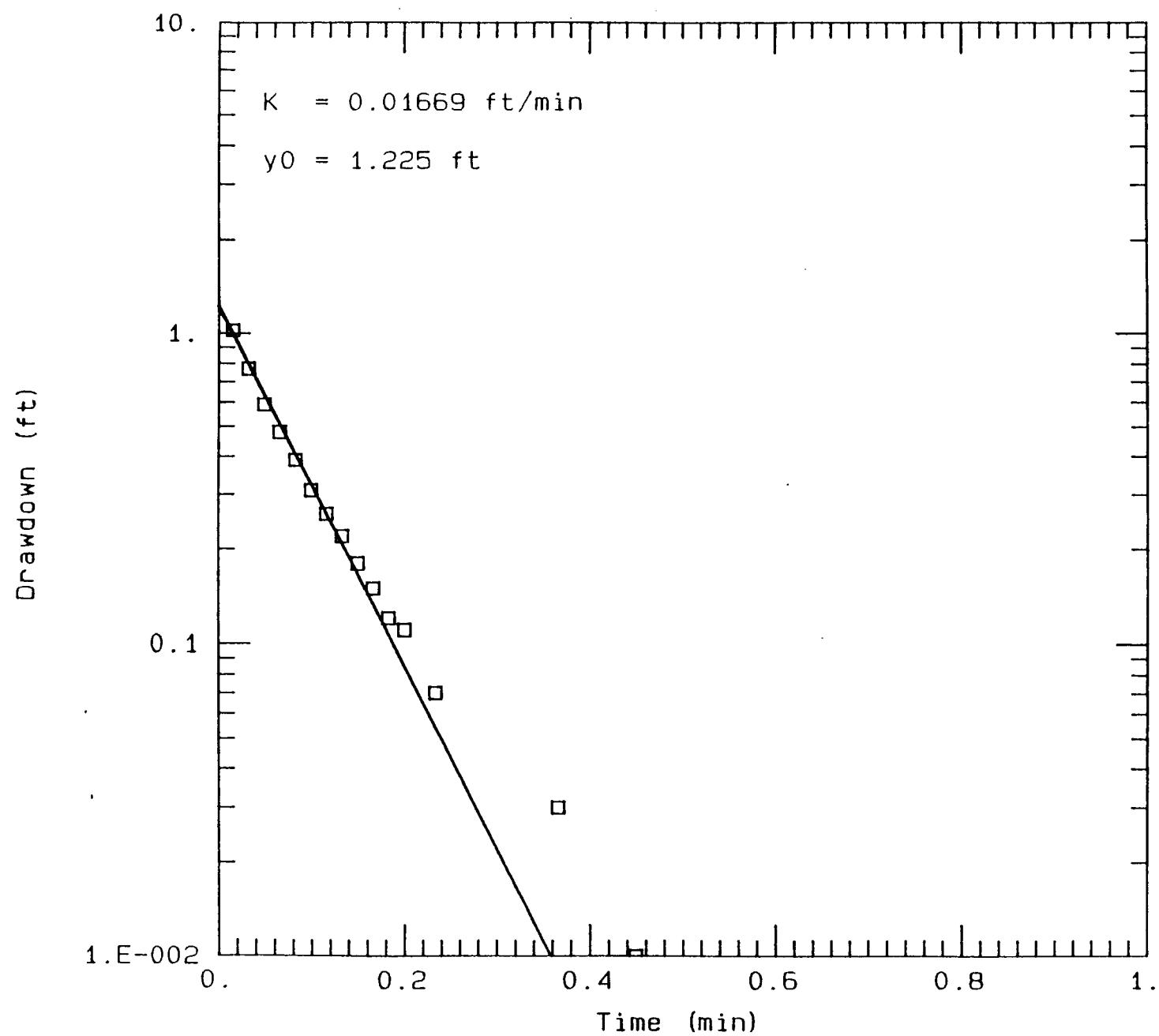
Texaco PNCP, Texas: well MW-4D, slug out



Texaco PNCP, Texas: well MW-7D, slug out



Texaco PNCP, Texas: well MW-8D, slug out



WATER SAMPLING LOGS



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/12/2007
Site/Well No. MW-4 Replicate No. NA Code No. NA
Weather Hot, 85 °, breezy Sampling Time: Begin 1636 End 1656

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	17.63	Odor	slight
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	31.00	pH (s.u.)	5.89
Depth To Water (ft bmp)	7.90	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	9.73	Conductivity ($\mu\text{mhos}/\text{cm}$)	2,901
Water Column In Well (ft)	23.10	Turbidity (NTU)	3.79
Casing Diameter/Type	2-inch PVC	Temperature (°C/°F)	73.47
Gallons In Well	3.69	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	13 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1600 End: 1636	Remarks	
Pumping Rate (gpm)	302 mL/min		
Evacuation Method	Micropurge		

Field Parameters

Color	clear
Odor	slight
Appearance	clear
pH (s.u.)	5.89
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	2,901
Turbidity (NTU)	3.79
Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	73.47
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Remarks

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = .04	1 - 1/2" = .09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
Gal./Ft.	1 - 1/4" = .06	2" = .16	3" = .37	4" = .65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-4

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/12/2007
Water Level (TOC):	7.90	Total Depth:	31.00
OVM Reading:	NA	3 Well Volumes:	11.07
Start Time:	1600	Total Volumes Removed:	13 liters

Observations/Comments:

Ferrous Iron: NA

Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/12/2007
Site/Well No. MW-4D Replicate No. NA Code No. NA
Weather Hot, cloudy, light breeze Sampling Time: Begin 1454 End 1552

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	18.69
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	106.54
Depth To Water (ft bmp)	17.58
Water Level Elevation (ft)	1.11
Water Column In Well (ft)	88.96
Casing Diameter/Type	2-inch PVC
Gallons In Well	14.23
Gallons Pumped/Bailed Prior To Sampling	11 liters
Sample Pump Intake Setting (ft bmp)	≈ 102' btoc
Purge Time	
Pumping Rate (gpm)	≈ 112 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	12.22
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	4,334
Turbidity (NTU)	16.32
Temperature ($^{\circ}\text{C}$, $^{\circ}\text{F}$)	75.38
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

Number	Preservative
3	HCl/4°C
1	4°C
1	HNO ₃ /4°C
1	4°C/NaOH

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: **MW-4D**

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/12/2007
Water Level (TOC):	17.58	Total Depth:	106.54
OVM Reading:	NA	3 Well Volumes:	42.69
Start Time:	1354	Total Volumes Removed:	11 liters

Time	Water Level (ft gmp)	Temp (°F)	Spc. Cond. (µmhos/cm)	Salinity (ppt)	pH (s.u.)
0	18.69	74.26	5,061	2.74	12.15
3	20.70	73.41	5,425	2.93	12.27
6	21.37	73.79	5,433	2.93	12.31
9	22.70	74.39	5,431	2.93	12.32
12	23.61	73.40	5,377	2.90	12.34
15	23.64	73.77	5,307	2.86	12.35
18	23.55	74.54	5,285	2.85	12.34
21	23.32	75.51	5,203	2.80	12.37
24	23.22	75.55	5,139	2.76	12.40
27	23.12	75.44	5,059	2.71	12.39
30	23.01	75.51	4,946	2.65	12.40
33	22.95	75.49	4,843	2.59	12.39
36	22.89	75.46	4,754	2.54	12.34
39	22.80	75.50	4,660	2.49	12.45
42	22.75	75.51	4,597	2.45	12.39
45	22.70	75.55	4,566	2.44	12.35
48	22.64	75.58	4,496	2.39	12.32
51	22.58	75.52	4,437	2.36	12.28
54	22.48	75.47	4,402	2.34	12.27
57	22.42	75.48	4,370	2.32	12.31
60	22.43	75.38	4,334	2.30	12.22

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/7/2007
Site/Well No. MW-5 Replicate No. NA Code No. NA
Weather Warm, overcast, breezy Sampling Time: Begin 0954 End 1024

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	13.22
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	27.62
Depth To Water (ft bmp)	9.73
Water Level Elevation (ft)	3.49
Water Column In Well (ft)	17.89
Casing Diameter/Type	2-inch PVC
Gallons In Well	2.86
Gallons Pumped/Bailed Prior To Sampling	≈ 8 liters
Sample Pump Intake Setting (ft bmp)	≈ 25'
Purge Time	Begin: 0927 End: 0954
Pumping Rate (gpm)	230 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	6.79
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	955
Turbidity (NTU)	7.07
Temperature (°C/°F)	72.28
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft. **1" = .04** **1 - 1/2" = .09** **2 - 1/2" = .26** **3 - 1/2" = .50** **6" = 1.47**
1 - 1/4" = .06 **2" = .16** **3" = .37** **4" = .65**

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-5

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/7/2007
Water Level (TOC):	9.73	Total Depth:	27.62
OVM Reading:	NA	3 Well Volumes:	8.58
Start Time:	0927	Total Volumes Removed:	≈ 8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/14/2007
Site/Well No. MW-6 Replicate No. NA Code No. NA
Weather Partly cloudy Sampling Time: Begin 1626 End 1700

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	16.76	Odor	strong
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	32.00	pH (s.u.)	5.60
Depth To Water (ft bmp)	4.41	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	12.35	Conductivity ($\mu\text{mhos}/\text{cm}$)	3,055
Water Column In Well (ft)	28.59	Turbidity (NTU)	13.27
Casing Diameter/Type	2-inch PVC	Temperature (°C/°F)	74.12
Gallons In Well	4.5744	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	5.25 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1556 End: 1626	Remarks	
Pumping Rate (gpm)	≈ 135 mL/min		
Evacuation Method	Micropurge		

Field Parameters

Color	clear
Odor	strong
Appearance	clear
pH (s.u.)	5.60
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	3,055
Turbidity (NTU)	13.27
Temperature (°C/°F)	74.12
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = .04	1 - 1/2" = .09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
Gal./Ft.					
	1 - 1/4" = .06	2" = .16	3" = .37	4" = .65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-6

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/14/2007
Water Level (TOC):	4.41	Total Depth:	32.00
OVM Reading:	NA	3 Well Volumes:	13.7232
Start Time:	1556	Total Volumes Removed:	5.25 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/14/2007
Site/Well No. MW-6D Replicate No. NA Code No. NA
Weather Warm, post rain Sampling Time: Begin 1516 End 1550

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	16.81
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	92.20
Depth To Water (ft bmp)	15.61
Water Level Elevation (ft)	1.20
Water Column In Well (ft)	76.59
Casing Diameter/Type	2-inch PVC
Gallons In Well	12.25
Gallons Pumped/Bailed Prior To Sampling	7 liters
Sample Pump Intake Setting (ft bmp)	≈ 90'
Purge Time	Begin: 1449 End 1516
Pumping Rate (gpm)	184 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	moderate
Appearance	clear
pH (s.u.)	7.21
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	3,377
Turbidity (NTU)	7.12
Temperature (°C/°F)	73.18
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = .26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-6D

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/14/2007
Water Level (TOC):	15.61	Total Depth:	92.20
OVM Reading:	NA	3 Well Volumes:	36.75
Start Time:	1449	Total Volumes Removed:	7 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/13/2007
Site/Well No. MW-7 Replicate No. NA Code No. NA
Weather Warm, clear, light breeze Sampling Time: Begin 0830 End 0857

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	17.65
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	30.01
Depth To Water (ft bmp)	5.23
Water Level Elevation (ft)	12.42
Water Column In Well (ft)	24.78
Casing Diameter/Type	2-inch PVC
Gallons In Well	3.96
Gallons Pumped/Bailed Prior To Sampling	9 liters
Sample Pump Intake Setting (ft bmp)	≈ 28'
Purge Time	Begin: 0800 End 0830
Pumping Rate (gpm)	238 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	<u>clear</u>
Odor	<u>none</u>
Appearance	<u>clear</u>
pH (s.u.)	<u>6.43</u>
Conductivity (ms/cm)	<u>NA</u>
Conductivity ($\mu\text{mhos}/\text{cm}$)	<u>408</u>
Turbidity (NTU)	<u>3.17</u>
Temperature ($^{\circ}\text{C}$) ($^{\circ}\text{F}$)	<u>76.16</u>
Dissolved Oxygen (mg/L)	<u>NA</u>
ORP (mV)	<u>NA</u>
Sampling Method	<u>Micropurge</u>
Remarks	

Constituents Sampled

Container Description

Number

Preservative

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	umhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-7

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/13/2007
Water Level (TOC):	5.23	Total Depth:	30.01
OVM Reading:	NA	3 Well Volumes:	11.88
Start Time:	0800	Total Volumes Removed:	9 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-10

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/13/2007
Water Level (TOC):	6.15	Total Depth:	37.00
OVM Reading:	NA	3 Well Volumes:	14.79
Start Time:	1354	Total Volumes Removed:	10 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
 Site Location Port Neches, Texas Date: 6/14/2007
 Site/Well No. MW-11 Replicate No. NA Code No. NA
 Weather Warm, clear Sampling Time: Begin 1106 End 1144

Evacuation Data

Measuring Point Top of Casing
 MP Elevation (ft) 17.46
 Land Surface Elevation (ft) NA
 Sounded Well Depth (ft bmp) 36.68
 Depth To Water (ft bmp) 5.04
 Water Level Elevation (ft) 12.42
 Water Column In Well (ft) 31.64
 Casing Diameter/Type 2-inch PVC
 Gallons In Well 5.07
 Gallons Pumped/Bailed Prior To Sampling 9.0 liters
 Sample Pump Intake Setting (ft bmp) midscreen
 Purge Time Begin: 1018 End 1106
 Pumping Rate (gpm) 168 mL/min
 Evacuation Method Micropurge

Field Parameters

Color	<u>clear</u>
Odor	<u>yes</u>
Appearance	<u>clear</u>
pH (s.u.)	<u>6.01</u>
Conductivity (ms/cm)	<u>NA</u>
Conductivity ($\mu\text{mhos}/\text{cm}$)	<u>14,978</u>
Turbidity (NTU)	<u>8.64</u>
Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	<u>77.91</u>
Dissolved Oxygen (mg/L)	<u>NA</u>
ORP (mV)	<u>NA</u>
Sampling Method	<u>Micropurge</u>
Remarks	

Constituents Sampled

VOCs (site-specific) (8260B)	Container Description	Number	Preservative
	40 mL glass vials	3	HCl/4°C
SVOCs (site-specific) (8270C)	1 gallon amber glass	1	4°C
Metals (total) (6010)	1-liter plastic	1	HNO ₃ /4°C
Cyanide	1-liter plastic	1	4°C/NaOH

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes		1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.						
1 - 1/4" = 0.06	2" = 0.16		3" = 0.37	4" = 0.65		

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
$^{\circ}\text{C}/^{\circ}\text{F}$	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	$\mu\text{mhos}/\text{cm}$	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-11

Job Name/Number:	<u>Huntsman/LA002689.0002.00001</u>	Date:	<u>6/14/2007</u>
Water Level (TOC):	<u>5.04</u>	Total Depth:	<u>36.68</u>
OVM Reading:	<u>NA</u>	3 Well Volumes:	<u>15.21</u>
Start Time:	<u>1018</u>	Total Volumes Removed:	<u>9 liters</u>

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/14/2007
Site/Well No. MW-11D Replicate No. MS/MSD Code No. NA
Weather Warm, clear, light breeze Sampling Time: Begin 0844 End 1010

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	17.50
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	91.91
Depth To Water (ft bmp)	14.91
Water Level Elevation (ft)	2.59
Water Column In Well (ft)	77.00
Casing Diameter/Type	2-inch PVC
Gallons In Well	12.32
Gallons Pumped/Bailed Prior To Sampling	9 liters
Sample Pump Intake Setting (ft bmp)	midscreen
Purge Time	Begin: 0814 End: 0844
Pumping Rate (gpm)	248 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	7.24
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	3,534
Turbidity (NTU)	8.92
Temperature (°C / °F)	74.61
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	*MS/MSD. Also collected FB-02 here.

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft.	1" = .04	1 - 1/2" = .09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
	1 - 1/4" = .06	2" = .16	3" = .37	4" = .65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-11D

Job Name/Number:	<u>Huntsman/LA002689.0002.00001</u>	Date:	<u>6/14/2007</u>
Water Level (TOC):	<u>14.91</u>	Total Depth:	<u>91.91</u>
OVM Reading:	<u>NA</u>	3 Well Volumes:	<u>36.96</u>
Start Time:	<u>0814</u>	Total Volumes Removed:	<u>9 liters</u>

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/11/2007
Site/Well No. MW-12 Replicate No. NA Code No. NA
Weather Hot, partly cloudy, impending rain Sampling Time: Begin 1518 End 1539

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	19.75	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	33.74	pH (s.u.)	6.67
Depth To Water (ft bmp)	7.40	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	12.35	Conductivity ($\mu\text{mhos}/\text{cm}$)	1,003
Water Column In Well (ft)	26.34	Turbidity (NTU)	3.54
Casing Diameter/Type	2-inch PVC	Temperature (°C/°F)	75.13
Gallons In Well	4.21	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	8 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1454	Remarks	
	End 1518		
Pumping Rate (gpm)	0.25 qts/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = .26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-12

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/11/2007
Water Level (TOC):	7.40	Total Depth:	33.74
OVM Reading:	NA	3 Well Volumes:	12.63
Start Time:	1454	Total Volumes Removed:	8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/13/2007
Site/Well No. MW-14 Replicate No. NA Code No. NA
Weather Warm, overcast, breezy Sampling Time: Begin 1600 End 1640

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	20.13
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	38.02
Depth To Water (ft bmp)	6.80
Water Level Elevation (ft)	13.33
Water Column In Well (ft)	31.22
Casing Diameter/Type	2-inch PVC
Gallons In Well	4.99
Gallons Pumped/Bailed Prior To Sampling	10 liters
Sample Pump Intake Setting (ft bmp)	36'
Purge Time	Begin: 1512 End 1600
Pumping Rate (gpm)	125
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	yes
Appearance	clear
pH (s.u.)	6.71
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	844
Turbidity (NTU)	3.61
Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	74.47
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

Number	Preservative
3	HCl/4°C
1	4°C
1	HNO ₃ /4°C
1	4°C/NaOH

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-14

Job Name/Number:	<u>Huntsman/LA002689.0002.00001</u>	Date:	<u>6/13/2007</u>
Water Level (TOC):	<u>6.80</u>	Total Depth:	<u>38.02</u>
OVM Reading:	<u>NA</u>	3 Well Volumes:	<u>14.97</u>
Start Time:	<u>1512</u>	Total Volumes Removed:	<u>10.0 liters</u>

Observations/Comments:

Ferrous Iron: NA Sulfide: NA

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
 Site Location Port Neches, Texas Date: 6/13/2007
 Site/Well No. MW-15 Replicate No. DUP-02 (061307) Code No. NA
 Weather Hot, clear, very light breeze Sampling Time: Begin 1058 End 1132

Evacuation Data

Measuring Point Top of Casing
 MP Elevation (ft) 17.81
 Land Surface Elevation (ft) NA
 Sounded Well Depth (ft bmp) 33.65
 Depth To Water (ft bmp) 4.83
 Water Level Elevation (ft) 12.98
 Water Column In Well (ft) 28.82
 Casing Diameter/Type 2-inch PVC
 Gallons In Well 4.61
 Gallons Pumped/Bailed Prior To Sampling 10 liters
 Sample Pump Intake Setting (ft bmp) midscreen
 Purge Time Begin: 1031 End 1058
 Pumping Rate (gpm) NA
 Evacuation Method Micropurge

Field Parameters

Color clear
 Odor yes
 Appearance clear
 pH (s.u.) 6.04
 Conductivity (ms/cm) NA
 Conductivity ($\mu\text{mhos}/\text{cm}$) 3,343
 Turbidity (NTU) 9.19
 Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$) 75.74
 Dissolved Oxygen (mg/L) NA
 ORP (mV) NA
 Sampling Method Micropurge
 Remarks Collected DUP-02 here.

Constituents Sampled

Constituents Sampled	Container Description	Number	Preservative
VOCs (site-specific) (8260B)	40 mL glass vials	9	HCl/4°C
SVOCs (site-specific) (8270C)	1 gallon amber glass	6	4°C
Metals (total) (6010)	1-liter plastic	3	HNO ₃ /4°C
Cyanide	1-liter plastic	1	4°C/NaOH

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes				
Gal./Ft.	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50
				6" = 1.47
	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
$^{\circ}\text{C}/^{\circ}\text{F}$	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	$\mu\text{mhos}/\text{cm}$	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-15

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/13/2007
Water Level (TOC):	4.83	Total Depth:	33.65
OVM Reading:	NA	3 Well Volumes:	13.83
Start Time:	1031	Total Volumes Removed:	10 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA

WATER SAMPLING LOG

Project	<u>Huntsman Petrochemical Corp.</u>	Project No.	<u>LA002689.0002.00001</u>
Site Location	<u>Port Neches, Texas</u>		Date: <u>6/12/2007</u>
Site/Well No.	<u>MW-16</u>	Replicate No.	<u>NA</u>
Weather	<u>Hot, cloudy, little to no breeze</u>		Sampling Time: <u>Begin 1108</u>
			End <u>1130</u>

Evacuation Data

Measuring Point	<u>Top of Casing</u>
MP Elevation (ft)	<u>20.13</u>
Land Surface Elevation (ft)	<u>NA</u>
Sounded Well Depth (ft bmp)	<u>34.35</u>
Depth To Water (ft bmp)	<u>6.99</u>
Water Level Elevation (ft)	<u>13.14</u>
Water Column In Well (ft)	<u>27.36</u>
Casing Diameter/Type	<u>2-inch PVC</u>
Gallons In Well	<u>4.37</u>
Gallons Pumped/Bailed Prior To Sampling	<u>15 liters</u>
Sample Pump Intake Setting (ft bmp)	<u>≈ 31'</u>
Purge Time	<u>Begin: 1017</u> <u>End 1108</u>
Pumping Rate (gpm)	<u>278 mL/min</u>
Evacuation Method	<u>Micropurge</u>

Field Parameters

Color	<u>clear</u>
Odor	<u>none</u>
Appearance	<u>clear</u>
pH (s.u.)	<u>5.43</u>
Conductivity (ms/cm)	<u>NA</u>
Conductivity (µmhos/cm)	<u>1,949</u>
Turbidity (NTU)	<u>3.43</u>
Temperature (°C / °F)	<u>73.50</u>
Dissolved Oxygen (mg/L)	<u>NA</u>
ORP (mV)	<u>NA</u>
Sampling Method	<u>Micropurge</u>
Remarks	

Constituents Sampled

	Container Description	Number	Preservative
VOCs (site-specific) (8260B)	<u>40 mL glass vials</u>	<u>3</u>	<u>HCl/4°C</u>
SVOCs (site-specific) (8270C)	<u>1 gallon amber glass</u>	<u>1</u>	<u>4°C</u>
Metals (total) (6010)	<u>1-liter plastic</u>	<u>1</u>	<u>HNO3/4°C</u>
Cyanide	<u>1-liter plastic</u>	<u>1</u>	<u>4°C/NaOH</u>

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes				
Gal./Ft.	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50
				6" = 1.47
	<u>1 - 1/4" = 0.06</u>	<u>2" = 0.16</u>	<u>3" = 0.37</u>	<u>4" = 0.65</u>

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-16

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/12/2007
Water Level (TOC):	6.99	Total Depth:	34.35
OVM Reading:	NA	3 Well Volumes:	13.11
Start Time:	1017	Total Volumes Removed:	15 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-17

Job Name/Number:	<u>Huntsman/LA002689.0002.00001</u>	Date:	<u>6/13/2007</u>
Water Level (TOC):	<u>5.71</u>	Total Depth:	<u>33.85</u>
OVM Reading:	<u>NA</u>	3 Well Volumes:	<u>13.5</u>
Start Time:	<u>0917</u>	Total Volumes Removed:	<u>10 liters</u>

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/12/2007
Site/Well No. MW-18 Replicate No. NA Code No. NA
Weather Hot, overcast, light breeze Sampling Time: Begin 0938 End 1004

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	19.08	Odor	slight
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	27.90	pH (s.u.)	6.55
Depth To Water (ft bmp)	6.28	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	12.80	Conductivity ($\mu\text{mhos}/\text{cm}$)	1,087
Water Column In Well (ft)	21.62	Turbidity (NTU)	5.27
Casing Diameter/Type	2-inch PVC	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	76.90
Gallons In Well	3.45	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	10 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 0908	Remarks	
	End 0938		
Pumping Rate (gpm)	260 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-18

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/12/2007
Water Level (TOC):	6.28	Total Depth:	27.90
OVM Reading:	NA	3 Well Volumes:	10.35
Start Time:	0908	Total Volumes Removed:	10 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



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WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/12/2007
Site/Well No. MW-18D Replicate No. NA Code No. NA
Weather Warm, cloudy, 88°F Sampling Time: Begin 0832 End 0903

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	19.00	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	90.72	pH (s.u.)	7.13
Depth To Water (ft bmp)	16.42	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	2.58	Conductivity ($\mu\text{mhos}/\text{cm}$)	4,015
Water Column In Well (ft)	74.30	Turbidity (NTU)	5.04
Casing Diameter/Type	2-inch PVC	Temperature (°C/°F)	76.77
Gallons In Well	11.88	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	8 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	≈ 87'	Sampling Method	Micropurge
Purge Time	Begin: 0802 End: 0832	Remarks	
Pumping Rate (gpm)	211 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft.	1" = .04	1 - 1/2" = .09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
	1 - 1/4" = .06	2" = .16	3" = .37	4" = .65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-18D

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/12/2007
Water Level (TOC):	16.42	Total Depth:	90.72
OVM Reading:	NA	3 Well Volumes:	35.64
Start Time:	0802	Total Volumes Removed:	8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
 Site Location Port Neches, Texas Date: 6/7/2007
 Site/Well No. MW-19 Replicate No. NA Code No. NA
 Weather Warm, overcast, breezy Sampling Time: Begin 1635 End 1700

Evacuation Data

Measuring Point	<u>Top of Casing</u>
MP Elevation (ft)	<u>19.92</u>
Land Surface Elevation (ft)	<u>NA</u>
Sounded Well Depth (ft bmp)	<u>35.35</u>
Depth To Water (ft bmp)	<u>6.71</u>
Water Level Elevation (ft)	<u>13.21</u>
Water Column In Well (ft)	<u>28.64</u>
Casing Diameter/Type	<u>2-inch PVC</u>
Gallons In Well	<u>4.58</u>
Gallons Pumped/Bailed Prior To Sampling	<u>8 liters</u>
Sample Pump Intake Setting (ft bmp)	<u>midscreen</u>
Purge Time	<u>Begin: 1608</u> <u>End 1635</u>
Pumping Rate (gpm)	<u>270 mL/min</u>
Evacuation Method	<u>Micropurge</u>

Field Parameters

Color	<u>clear</u>
Odor	<u>none</u>
Appearance	<u>clear</u>
pH (s.u.)	<u>6.78</u>
Conductivity (ms/cm)	<u>NA</u>
Conductivity ($\mu\text{mhos}/\text{cm}$)	<u>382</u>
Turbidity (NTU)	<u>7.85</u>
Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	<u>72.17</u>
Dissolved Oxygen (mg/L)	<u>NA</u>
ORP (mV)	<u>NA</u>
Sampling Method	<u>Micropurge</u>
Remarks	<u></u>

Constituents Sampled

VOCs (site-specific) (8260B)	Container Description	<u>40 mL glass vials</u>	Number	<u>3</u>	Preservative	<u>HCl/4°C</u>
SVOCs (site-specific) (8270C)		<u>1 gallon amber glass</u>		<u>1</u>		<u>4°C</u>
Metals (total) (6010)		<u>1-liter plastic</u>		<u>1</u>		<u>HNO3/4°C</u>
Cyanide		<u>1-liter plastic</u>		<u>1</u>		<u>4°C/NaOH</u>

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes		1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.						
		<u>1 - 1/4" = 0.06</u>	<u>2" = 0.16</u>	<u>3" = 0.37</u>	<u>4" = 0.65</u>	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
$^{\circ}\text{C}/^{\circ}\text{F}$	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	$\mu\text{mhos}/\text{cm}$	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



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FIELD PARAMETERS

Well Identification Number: MW-19

Job Name/Number:	<u>Huntsman/LA002689.0002.00001</u>	Date:	<u>6/7/2007</u>
Water Level (TOC):	<u>6.71</u>	Total Depth:	<u>35.35</u>
OVM Reading:	<u>NA</u>	3 Well Volumes:	<u>13.74</u>
Start Time:	<u>1608</u>	Total Volumes Removed:	<u>8 liters</u>

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



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WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/7/2007
Site/Well No. MW-19D Replicate No. NA Code No. NA
Weather Warm, breezy Sampling Time: Begin 1435 End 1603

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	19.83	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	95.70	pH (s.u.)	7.13
Depth To Water (ft bmp)	17.25	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	2.58	Conductivity ($\mu\text{mhos}/\text{cm}$)	2,328
Water Column In Well (ft)	79.85	Turbidity (NTU)	39.02
Casing Diameter/Type	2-inch PVC	Temperature (°C / °F)	73.81
Gallons In Well	12.77	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	7.0 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1408 End 1435	Remarks	
Pumping Rate (gpm)	200 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



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FIELD PARAMETERS

Well Identification Number: MW-19D

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/7/2007
Water Level (TOC):	17.25	Total Depth:	95.70
OVM Reading:	NA	3 Well Volumes:	38.31
Start Time:	1408	Total Volumes Removed:	7.0 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/7/2007
Site/Well No. MW-20 Replicate No. NA Code No. NA
Weather Overcast, strong breeze, warm Sampling Time: Begin 0829 End 0854

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	9.90	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	27.77	pH (s.u.)	6.85
Depth To Water (ft bmp)	9.82	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	0.88	Conductivity ($\mu\text{mhos}/\text{cm}$)	1,579
Water Column In Well (ft)	18.75	Turbidity (NTU)	4.95
Casing Diameter/Type	2-inch PVC	Temperature (°C/°F)	72.63
Gallons In Well	3.00	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	9.0 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	≈ 24'	Sampling Method	Micropurge
Purge Time	Begin: 0802 End 0829	Remarks	
Pumping Rate (gpm)	270 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel **K. Montgomery/C. Fontenot**

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



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FIELD PARAMETERS

Well Identification Number: MW-20

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/7/2007
Water Level (TOC):	9.02	Total Depth:	27.77
OVM Reading:	NA	3 Well Volumes:	12.0 gallons
Start Time:	0802	Total Volumes Removed:	9.0 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



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WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/7/2007
Site/Well No. MW-21 Replicate No. NA Code No. NA
Weather Warm, overcast, breezy Sampling Time: Begin 1112 End 1140

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	24.58	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	37.73	pH (s.u.)	7.01
Depth To Water (ft bmp)	15.61	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	8.97	Conductivity ($\mu\text{mhos}/\text{cm}$)	505
Water Column In Well (ft)	22.12	Turbidity (NTU)	5.24
Casing Diameter/Type	2-inch PVC	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	74.58
Gallons In Well	3.53	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	8 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1045 End 1112	Remarks	
Pumping Rate (gpm)	237 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft.	1" = .04	1 - 1/2" = .09	2 - 1/2" = .26	3 - 1/2" = .50	6" = 1.47
	1 - 1/4" = .06	2" = .16	3" = .37	4" = .65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-21

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/7/2007
Water Level (TOC):	15.61	Total Depth:	37.73
OVM Reading:	NA	3 Well Volumes:	10.59
Start Time:	1045	Total Volumes Removed:	8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/6/2007
Site/Well No. MW-22 Replicate No. NA Code No. NA
Weather Hot, partly cloudy, slight breeze Sampling Time: Begin 1542 End 1612

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	22.19	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	22.60	pH (s.u.)	6.86
Depth To Water (ft bmp)	13.80	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	8.37	Conductivity ($\mu\text{mhos}/\text{cm}$)	557
Water Column In Well (ft)	8.80	Turbidity (NTU)	2.56
Casing Diameter/Type	2-inch PVC	Temperature (°C °F)	71.85
Gallons In Well	1.40	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	8 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1515 End 1542	Remarks	
Pumping Rate (gpm)	200 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-22

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/6/2007
Water Level (TOC):	13.80	Total Depth:	22.60
OVM Reading:	NA	3 Well Volumes:	4.20
Start Time:	1515	Total Volumes Removed:	8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/8/2007
Site/Well No. MW-29 Replicate No. DUP-01 (060807) Code No. NA
Weather Warm, partly cloudy, slight breeze Sampling Time: Begin 0816 End 0901

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	13.19
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	31.40
Depth To Water (ft bmp)	6.04
Water Level Elevation (ft)	7.15
Water Column In Well (ft)	25.36
Casing Diameter/Type	2-inch PVC
Gallons In Well	4.05
Gallons Pumped/Bailed Prior To Sampling	≈ 9.0 liters
Sample Pump Intake Setting (ft bmp)	midscreen
Purge Time	Begin: 0749 End 0816
Pumping Rate (gpm)	285 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	slight
Appearance	clear
pH (s.u.)	6.64
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	1,890
Turbidity (NTU)	3.51
Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	73.40
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

Parameter	Container Description
VOCs (site-specific) (8260B)	40 mL glass vials
SVOCs (site-specific) (8270C)	1 gallon amber glass
Metals (total) (6010)	1-liter plastic
Cyanide	1-liter plastic

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft. **1" = 0.04** **1 - 1/2" = 0.09** **2 - 1/2" = 0.26** **3 - 1/2" = 0.50** **6" = 1.47**
1 - 1/4" = 0.06 **2" = 0.16** **3" = 0.37** **4" = 0.65**

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-29

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/8/2007
Water Level (TOC):	6.04	Total Depth:	31.40
OVM Reading:	NA	3 Well Volumes:	12.15
Start Time:	0749	Total Volumes Removed:	~ 9.0 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/11/2007
Site/Well No. MW-30 Replicate No. NA Code No. NA
Weather Hot, approaching 95°, partly cloudy Sampling Time: Begin 1055 End 1133

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	10.88	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	32.00	pH (s.u.)	6.68
Depth To Water (ft bmp)	6.41	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	4.47	Conductivity ($\mu\text{mhos}/\text{cm}$)	2,004
Water Column In Well (ft)	25.59	Turbidity (NTU)	4.17
Casing Diameter/Type	2-inch PVC	Temperature ($^{\circ}\text{C}$, $^{\circ}\text{F}$)	74.44
Gallons In Well	4.09	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	7 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 1028 End 1055	Remarks	
Pumping Rate (gpm)	150 mL/min		
Evacuation Method	Micropurge		

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	6.68
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	2,004
Turbidity (NTU)	4.17
Temperature (°C / °F)	74.44
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge

Constituents Sampled

Number	Preservative
3	HCl/4°C
1	4°C
1	HNO ₃ /4°C
1	4°C/NaOH

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft. **1" = .04** **1 - 1/2" = .09** **2 - 1/2" = .26** **3 - 1/2" = .50** **6" = 1.47**
1 - 1/4" = .06 **2" = .16** **3" = .37** **4" = .65**

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-30

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/7/2007
Water Level (TOC):	6.41	Total Depth:	32.00
OVM Reading:	NA	3 Well Volumes:	12.27
Start Time:	1028	Total Volumes Removed:	7 liters

Observations/Comments:

Ferrous Iron: _____ NA

Sulfide: NA



WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
 Site Location Port Neches, Texas Date: 6/6/2007
 Site/Well No. MW-31 Replicate No. NA Code No. NA
 Weather Hot, partly cloudy, ≈ 97°F Sampling Time: Begin 1332 End 1430

Evacuation Data

Measuring Point Top of Casing
 MP Elevation (ft) 14.94
 Land Surface Elevation (ft) NA
 Sounded Well Depth (ft bmp) 32.80
 Depth To Water (ft bmp) 6.16
 Water Level Elevation (ft) 8.78
 Water Column In Well (ft) 26.64
 Casing Diameter/Type 2-inch PVC
 Gallons In Well 4.26
 Gallons Pumped/Bailed Prior To Sampling 5.25 liters
 Sample Pump Intake Setting (ft bmp) NA
 Purge Time Begin: 1305 End 1332
 Pumping Rate (gpm) 112 mL/min
 Evacuation Method Micropurge

Field Parameters

Color	<u>clear</u>
Odor	<u>none</u>
Appearance	<u>clear</u>
pH (s.u.)	<u>6.65</u>
Conductivity (ms/cm)	<u>NA</u>
Conductivity ($\mu\text{mhos}/\text{cm}$)	<u>956</u>
Turbidity (NTU)	<u>4.11</u>
Temperature ($^{\circ}\text{C}/^{\circ}\text{F}$)	<u>76.43</u>
Dissolved Oxygen (mg/L)	<u>NA</u>
ORP (mV)	<u>NA</u>
Sampling Method	<u>Micropurge</u>

Remarks
Constituents Sampled
VOCs (site-specific) (8260B)
Container Description
Number
Preservative
SVOCs (site-specific) (8270C)
40 mL glass vials
3
HCl/4°C
Metals (total) (6010)
1 gallon amber glass
1
4°C
Cyanide
1-liter plastic
1
HNO₃/4°C

1-liter plastic
1
4°C/NaOH



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-31

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/11/2007
Water Level (TOC):	6.16	Total Depth:	32.80
OVM Reading:	NA	3 Well Volumes:	12.78
Start Time:	1305	Total Volumes Removed:	5.25 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/6/2007
Site/Well No. MW-32 Replicate No. NA Code No. NA
Weather Warm, partly cloudy, slight breeze Sampling Time: Begin 1055 End 1123

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	9.66	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	29.18	pH (s.u.)	5.95
Depth To Water (ft bmp)	6.09	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	3.57	Conductivity ($\mu\text{mhos}/\text{cm}$)	175,222
Water Column In Well (ft)	23.09	Turbidity (NTU)	2.98
Casing Diameter/Type	2-inch PVC	Temperature ($^{\circ}\text{C}$ / $^{\circ}\text{F}$)	73.93
Gallons In Well	3.69	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	8 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	<u>Begin:</u> 1028 <u>End:</u> 1055	Remarks	
Pumping Rate (gpm)	235 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft.	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-32

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/6/2007
Water Level (TOC):	6.09	Total Depth:	29.18
OVM Reading:	NA	3 Well Volumes:	11.07
Start Time:	1028	Total Volumes Removed:	8 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/6/2007
Site/Well No. MW-33 Replicate No. NA Code No. NA
Weather Warm, partly cloudy, breezy Sampling Time: Begin 0936 End 1002

Evacuation Data

Measuring Point	<u>Top of Casing</u>	Color	<u>clear</u>
MP Elevation (ft)	<u>15.99</u>	Odor	<u>none</u>
Land Surface Elevation (ft)	<u>NA</u>	Appearance	<u>clear</u>
Sounded Well Depth (ft bmp)	<u>34.33</u>	pH (s.u.)	<u>6.95</u>
Depth To Water (ft bmp)	<u>8.99</u>	Conductivity (ms/cm)	<u>NA</u>
Water Level Elevation (ft)	<u>7.00</u>	Conductivity ($\mu\text{mhos}/\text{cm}$)	<u>961</u>
Water Column In Well (ft)	<u>25.34</u>	Turbidity (NTU)	<u>4.53</u>
Casing Diameter/Type	<u>2-inch PVC</u>	Temperature (°C/°F)	<u>73.76</u>
Gallons In Well	<u>4.05</u>	Dissolved Oxygen (mg/L)	<u>NA</u>
Gallons Pumped/Bailed Prior To Sampling	<u>8.5 liters</u>	ORP (mV)	<u>NA</u>
Sample Pump Intake Setting (ft bmp)	<u>midscreen</u>	Sampling Method	<u>Micropurge</u>
Purge Time	<u>Begin: 0909 End 0936</u>	Remarks	<u></u>
Pumping Rate (gpm)	<u>270 mL/min</u>		
Evacuation Method	<u>Micropurge</u>		

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	6.95
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	961
Turbidity (NTU)	4.53
Temperature (°C (°F))	73.76
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Remarks

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Flow Casting Volumes

Gal./Ft.	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
	1 - 1/4" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-33

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/6/2007
Water Level (TOC):	8.99	Total Depth:	34.33
OVM Reading:	NA	3 Well Volumes:	12.15
Start Time:	0909	Total Volumes Removed:	8.5 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-34

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/8/2007
Water Level (TOC):	7.42	Total Depth:	36.07
OVM Reading:	NA	3 Well Volumes:	13.74
Start Time:	0926	Total Volumes Removed:	9.0 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/6/2007
Site/Well No. MW-35 Replicate No. NA Code No. NA
Weather Clear, very warm, light breeze, humid Sampling Time: Begin 0818 End 0846

Evacuation Data

Measuring Point	Top of Casing	Color	clear
MP Elevation (ft)	19.78	Odor	none
Land Surface Elevation (ft)	NA	Appearance	clear
Sounded Well Depth (ft bmp)	38.14	pH (s.u.)	6.87
Depth To Water (ft bmp)	11.21	Conductivity (ms/cm)	NA
Water Level Elevation (ft)	8.57	Conductivity ($\mu\text{mhos}/\text{cm}$)	1,273
Water Column In Well (ft)	26.93	Turbidity (NTU)	4.12
Casing Diameter/Type	2-inch PVC	Temperature (°C / °F)	72.77
Gallons In Well	4.30	Dissolved Oxygen (mg/L)	NA
Gallons Pumped/Bailed Prior To Sampling	9.0 liters	ORP (mV)	NA
Sample Pump Intake Setting (ft bmp)	midscreen	Sampling Method	Micropurge
Purge Time	Begin: 0752 End 0818	Remarks	
Pumping Rate (gpm)	240 mL/min		
Evacuation Method	Micropurge		

Constituents Sampled

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Gal./Ft. **1" = .04** **1 - 1/2" = .09** **2 - 1/2" = .26** **3 - 1/2" = .50** **6" = 1.47**
1 - 1/4" = .06 **2" = .16** **3" = .37** **4" = .65**

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: MW-35

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/6/2007
Water Level (TOC):	11.21	Total Depth:	38.14
OVM Reading:	NA	3 Well Volumes:	12.90
Start Time:	0752	Total Volumes Removed:	9.0 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA



ARCADIS

WATER SAMPLING LOG

Project Huntsman Petrochemical Corp. Project No. LA002689.0002.00001
Site Location Port Neches, Texas Date: 6/6/2007
Site/Well No. RFI-12 Replicate No. NA Code No. NA
Weather Hot, partly cloudy, breezy Sampling Time: Begin 1417 End 1443

Evacuation Data

Measuring Point	Top of Casing
MP Elevation (ft)	16.25
Land Surface Elevation (ft)	NA
Sounded Well Depth (ft bmp)	29.48
Depth To Water (ft bmp)	5.83
Water Level Elevation (ft)	10.42
Water Column In Well (ft)	23.65
Casing Diameter/Type	2-inch PVC
Gallons In Well	3.78
Gallons Pumped/Bailed Prior To Sampling	11 liters
Sample Pump Intake Setting (ft bmp)	midscreen
Purge Time	Begin: 1350 End 1417
Pumping Rate (gpm)	340 mL/min
Evacuation Method	Micropurge

Field Parameters

Color	clear
Odor	none
Appearance	clear
pH (s.u.)	6.92
Conductivity (ms/cm)	NA
Conductivity ($\mu\text{mhos}/\text{cm}$)	533
Turbidity (NTU)	5.73
Temperature ($^{\circ}\text{C}$) ($^{\circ}\text{F}$)	70.81
Dissolved Oxygen (mg/L)	NA
ORP (mV)	NA
Sampling Method	Micropurge
Remarks	

Constituents Sampled

VOCs (site-specific) (8260B)
SVOCs (site-specific) (8270C)
Metals (total) (6010)
Cyanide

Container Description

Number

Prognostics

Sampling Personnel K. Montgomery/C. Fontenot

Well Casing Volumes

Well Casing volumes	1" = 0.04	1 - 1/2" = 0.09	2 - 1/2" = 0.26	3 - 1/2" = 0.50	6" = 1.47
Gal./Ft.	1" = 0.06	2" = 0.16	3" = 0.37	4" = 0.65	6" = 1.47

bmp	Below measuring point	ml	Milliliter	NTU	Nephelometric Turbidity Units
°C/°F	Degrees Celsius/Fahrenheit	mS/cm	Millisiemens per centimeter	PVC	Polyvinyl chloride
ft	Feet	msl	Mean sea level	s.u.	Standard units
gpm	Gallons per minute	NA	Not Applicable	µmhos/cm	Micromhos per centimeter
mg/L	Milligrams per liter	NR	Not Recorded	VOC	Volatile Organic Compounds
ppt	Parts per thousand	CS	Carbon steel	SS	Stainless steel



ARCADIS

FIELD PARAMETERS

Well Identification Number: RFI-12

Job Name/Number:	Huntsman/LA002689.0002.00001	Date:	6/6/2007
Water Level (TOC):	5.83	Total Depth:	29.48
OVM Reading:	NA	3 Well Volumes:	11.34
Start Time:	1350	Total Volumes Removed:	11 liters

Observations/Comments:

Ferrous Iron: NA Sulfide: NA